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GEORGE H. KRESS, M. D., *Editor*

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52

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CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

Care of the Indigent—Alameda County Plan.	By George G. Reine, Oakland.....	1
Discussion by R. G. Leland, Chicago, Illinois.		
Central Clinic Service—San Diego County Plan.	By Hall G. Holder, San Diego.....	6
Living Grafts of Endocrine Glands. Part II.	By Harvey B. Stone, James C. Owings, and George O. Gey, Baltimore, Maryland.....	10
Prostatic Obstruction—Development of Its Surgical Treatment. Part II.	By Hermon C. Bumpus, Jr., Rochester, Minnesota.....	13
Cardiovascular Disease in Diabetes Mellitus. Part II.	By James W. Sherrill, La Jolla.....	17
The Physician's Interest in the Making of a Will.	By Hartley F. Peart, Esq., San Francisco.....	20
Muscle Training in Industrial Injuries.	By T. E. P. Gocher, San Francisco.....	21
Discussion by Harold M. F. Behneman, San Francisco; John Homer Woolsey, San Francisco.		
Refraction.	By T. W. Kelsey, Sacramento.....	25
Discussion by Dewey R. Powell, Stockton; M. N. Beigelman, Los Angeles; Joseph L. McCool, San Francisco.		
Calcium Therapy in Urology.	By Henry A. R. Kreutzmann, San Francisco.....	29
Discussion by Franklin Farman, Los Angeles; Miley B. Wesson, San Francisco; Albert M. Meads, Oakland.		
Chronic Purulent Otitis Media.	By Russell Fletcher, San Francisco.....	32
Discussion by J. D. Lewis, Santa Barbara; Frank A. Burton, San Diego; Robert C. Martin, Los Angeles.		
The Adenomatous Goiter.	By W. P. Kroger, Los Angeles.....	35
Discussion by H. H. Searls, San Francisco; Clarence G. Toland, Los Angeles; William E. Costolow, Los Angeles.		
Sterility.	By Frederic M. Loomis, Oakland.....	38
Discussion by Margaret Schulze, San Francisco; Louis I. Breitstein, San Francisco; Lyle G. McNeile, Los Angeles.		
Toxemias of Pregnancy.	By Louis I. Breitstein and Abraham Bernstein, San Francisco.....	42
Discussion by E. M. Lazard, Los Angeles; Margaret Schulze, San Francisco; John A. Sperry, San Francisco.		

THE LURE OF MEDICAL HISTORY:

Johanna Sigismund Elsholtz. Part II.	By Ethel Gladstone, San Francisco....	45
--------------------------------------	---------------------------------------	----

CLINICAL NOTES AND CASE REPORTS:

Duodenal Stasis.	By Paul H. Moore, Los Angeles.....	48
Carcinoid Appendix.	By Walter J. Sullivan, Los Angeles.....	49
Foreign Body in the Ischiorectal Space.	By David N. Yaker, Los Angeles.....	50

BEDSIDE MEDICINE:

Migraine	By Edward W. Twitchell, San Francisco; LeRoy Briggs, San Francisco; Gordon E. Hein, San Francisco.....	52
----------	--	----

EDITORIALS:

The Alameda and San Diego Medical Service Plans	.....	56
The Use of the Injunction in Medical Practice	.....	56
Making a Will	.....	57
Decreased Budget of State Board of Health	.....	58

EDITORIAL COMMENT:

Mediastinal Pleurisy.	By Henry Snure, Los Angeles.....	58
Histological Specificity.	By W. H. Mawarang, Palo Alto.....	59
Common Surgical Errors.	By Harold E. Crowe, Los Angeles.....	60

STATE MEDICAL ASSOCIATIONS:

C. M. A. DEPARTMENT OF PUBLIC RELATIONS	.....	61
CANCER COMMISSION	.....	62
CALIFORNIA MEDICAL ASSOCIATION	.....	64
The Woman's Auxiliary to the California Medical Association	.....	65
NEVADA STATE MEDICAL ASSOCIATION	.....	67

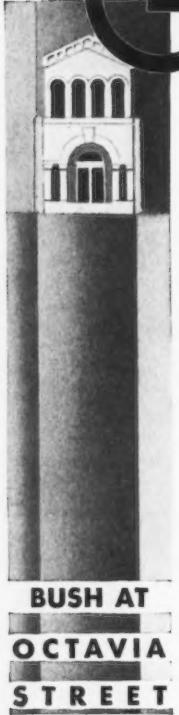
MISCELLANY:

News	.....	69
Twenty-Five Years Ago	.....	72
Board of Medical Examiners of the State of California	.....	72
California Medical Association Directories	Adv. pages 2, 4, 6	6
Book Reviews	Adv. page 11

ADVERTISEMENTS—INDEX:

..... Adv. page 8

GREENS' EYE HOSPITAL



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104

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ACCREDITED REPRESENTATIVE OF THE CALIFORNIA AND NEVADA MEDICAL ASSOCIATIONS

VOLUME XXXIX

JULY, 1933

No. 1

ALAMEDA COUNTY PLAN*

A PLAN FOR THE CARE OF INDIGENT AND PART-PAY PATIENTS, AND FOR A MUTUAL, NONPROFIT HOSPITAL SERVICE

By GEORGE G. REINLE, M. D.
Oakland

DISCUSSION by R. G. Leland, M. D., Chicago, Illinois.

ONE of the foremost topics of study and discussion today is the sociologic and economic aspect of the cost of providing adequate, efficient, and satisfactory medical care to persons of moderate income.

BASIC OBJECTS OF THE ALAMEDA PLAN

Therefore the Alameda County Medical Association undertook the study and development of a plan which it was believed would solve the problem of medical care and hospitalization for:

1. The indigent;
2. The individual of moderate means; and
3. Those who can properly finance all their medical problems to the entire satisfaction of the medical profession, the hospital, and the community.

Preventive medicine is left to the properly constituted health authorities: federal, state, and municipal.

In developing their plan, the members of the Alameda County Medical Association have been mindful of:

- (a) The undesirable schemes of the commercial organizations which render medical and hospital service for profit;
- (b) The necessity that the relationship of patient and physician shall remain as it has always been—the patient having choice of his medical attendant from the membership of the Alameda County Medical Association; and the

(c) Desirability of a plan of hospitalization under which the beneficiary would pay a small sum to a central organization, which would be conducted by a nonprofit organization controlled by officers of the medical association and executives of those local hospitals having accredited standing from the American College of Surgeons. This plan would guarantee payment to the hospi-

tal, and leave the beneficiary in a position to finance his obligations to his physician.

To keep the cost of laboratory service, roentgen ray and medicine in the same ratio as the cost of medical service, the pharmacists' association, roentgen ray and pathological laboratories were embraced in the Alameda County plan.

In this plan we believe that we fulfill most of the recommendations of the Committee on the Costs of Medical Care.

FORMER CONDITIONS IN ALAMEDA COUNTY

It may be well to review the situation which prevailed in Alameda County prior to beginning this study and which has helped to make the adoption of this plan possible.

In 1918 there was established in Oakland, through the initiative of Miss Annie Florence Brown, a clinic for the medical care of the indigent sick and persons of moderate means. This was accomplished with the approval of the Alameda County Medical Association, after a thorough study of the problem. The organization, an eleemosynary corporation, was named the Public Health Center of Alameda County.

In this connection one may be reminded that even in 1918, fifteen years ago and long before even the most pessimistic had foreseen the present economic cataclysm, public attention had been directed to the need for a public health service of this sort.

Alameda County boasted several clinics (in Berkeley, Alameda, and in rural districts) but they operated as independent, unrelated units with no central control. Each received assistance from the Community Chest and the County Board of Supervisors. Patients who had tuberculosis were cared for by the Alameda County Tuberculosis Society.

About July, 1917, the supervisors had established the Alameda County Institutions Commission; its purpose, to take entire charge of the operation of all county institutions wholly supported by county funds and designed for the care of the indigent sick. Its jurisdiction did not extend to clinics.

THE ALAMEDA SURVEY MADE IN 1930

The picture now shifts to the year 1930, with the problem of medical care becoming more and more acute. In this year several health organiza-

* Read at the second general meeting of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

tions, cognizant of the critical situation, requested a county health survey. The request was carried to the State Board of Health by the Board of Supervisors. It was granted and the survey was made by J. W. Mountain, a surgeon of the United States Public Health Service, the expense being defrayed by the Alameda County Tuberculosis Society.

Doctor Mountain's report embraced two main sections:

1. Prevention of disease and promotion of health; and
2. Care of the sick.

The report recommended that the treatment function of health centers (clinics) be assumed by the County Institutions Commission. This involved control over appointments, budgets and accounts and, where desirable, the ownership of property.

The Mountain report gave the supervisors a clear picture of the problem of the care of the indigent and near indigent. In August, 1932, resolutions were adopted in accordance with the report's recommendations. On September 1 a new set-up went into effect, and thus all the pay clinics went out of existence with one stroke. Thereafter only those citizens who were indigent could receive care at any of the clinics in Alameda County operated by the County Institutions Commission.

Meanwhile, under the direction of the commission and the supervision of the county medical director, Dr. Benjamin W. Black, the following public hospitals and sanatoria were operating:

1. Highland Hospital, a modern institution of 450 beds.
2. Fairmount Hospital, a convalescent hospital with 900 beds.
3. Arroyo Sanatorium for citizens with tuberculosis; and
4. Del Valle, a preventorium for children.

Economically and efficiently conducted under Doctor Black, each of these institutions has its superintendent, except the preventorium, which is in charge of the superintendent of the adjacent Arroyo Sanatorium.

HOW ALAMEDA COUNTY MET ITS NEW PROBLEMS

Even before these changes went into effect, Alameda County had maintained a staff of county doctors who had served patients in their homes on a fee basis. Under the new set-up the county physicians were made regular county employees on a salary basis covering part-time service.

These changes left in the hands of the Alameda County Medical Association the problem of caring for the low-income group, who in the new arrangement were now without medical care.

Concluding an extensive and exhaustive study of the problem, the Alameda County Medical Association at a meeting in October, 1932, adopted the following resolution:

WHEREAS, It has come to the attention of the Council of the Alameda County Medical Association that certain changes have taken place in connection with the work performed by the county doctors, its county physicians, and the consideration that they have given to the "indigent sick" and "dependent poor"; and

WHEREAS, Public Health Centers have up to this time cared for certain patients from whom certain fees have been taken, and who appear to be not eligible for care at the expense of the public, under the Indigency Act of the State of California; and

WHEREAS, The county profession realizes the importance of maintaining a service for patients that are not able to pay a full fee; now therefore be it

Resolved, That it appears to be necessary to establish a plan whereby certain patients formerly cared for at health centers, who do not technically fall under the term "indigency" and at the same time require attention at the hands of reputable physicians, and whose care should be assumed at a fair price within the ability of the patient to pay; and be it further

Resolved, That the Alameda County Medical Association agrees to establish a list of physicians who will volunteer to accept calls for such classes of patients and to render service when called in coöperation with the established official county agencies and centralized social service, as established in Alameda County and according to such additional plans as may be adopted.

It was gratifying to note that the call for volunteers met with practically 100 per cent response.

Numerous problems were met with in putting the plan into effect, and one of the first was the re-rating of patients. Where formerly the ratings of applicants to clinics were A, B, C, D, and E, depending on the applicant's financial rating, the new schedule fixed the ratings simply A and R, the first meaning "without resources" and the second "with some means to pay for medical services."

Thus all applicants were automatically divided into two definite classes: those without resources and therefore dependent upon county aid, and those able to pay to some extent but who cannot be classed as indigents under the law. These latter patients are being served by the members of the Association, and are given proper care whether able to pay one dollar or only fifty cents.

Physicians on the volunteer list are listed alphabetically, geographically, and as to specialty; and they are called in rotation. The physician makes the original call, supplies the necessary professional services, and charges the patient a fee that he is able to pay. The fee is paid at the time the service is rendered.

NECESSARY ELEMENTS IN THE PLAN

Necessarily the carrying out of this plan requires the fullest coöperation of the various clinics. Where a family applies to a recognized charitable agency and the family is not known to the agency, the call is referred to a physician in the same manner through the central social service agency.

If the doctor who has been sent on the case can work out the financial problem with the patient, then he is retained on the case by the patient and the case becomes a part of his own private practice. If he determines it to be an indigent case, he may refer the patient to the clinic operated by the county, to a hospital operated by the county for charity cases, and/or to the county physician who is paid by the county to care for indigent patients.

For each patient the doctor makes out a report, the form of which was adopted by the Alameda County Medical Association. Brief but comprehensive, this report describes the financial and

social status of the patient and indicates the disposition of the case by the doctor. Filled in by the doctor, the report reveals the total family income per month, the length of time the income has been received, the number of persons supported on the income and whether adults or children; debts, savings, nationality, whether the home is owned or held by equity—mortgage, rent or payments on home—whether patient is a war veteran and length of residence in the county. For reference it bears the name of the agency by which the case was referred, name of the social worker, medical diagnosis, and probable duration of illness.

On the reverse of the report the patient signs his name below a printed paragraph which says the patient has made the foregoing representations for the purpose of securing necessary medical and hospital service, being unable to pay in full or anything, as the case may be. He consents that the report may be furnished to the Health Department of Alameda County and to the various charity agencies, and agrees to pay for the medical services specified at the part-pay fee schedule of the Alameda County Medical Association.

As a component element of the Alameda County Plan there was formed an obstetrical group, the members of which will accept any patient referred to it by the social service at a reduced fee. The money collected from such patients is deposited in a central fund which, after the visiting nurses are paid, is divided equally among the members. The purpose of this plan of division is to avoid the possibility of Jones consistently receiving more than Brown for his services, or vice versa. Jones might have a run of five-dollar cases, while Brown was getting five times that sum for each case. The division plan, however, tends to solve that problem.

Coöoperating with the Association in carrying out the plan, the established pathological laboratories have agreed to render services within the means of the individual to pay. To illustrate: If the specimen is sent to the laboratory, one-fourth of the regular fee is charged. If it is necessary for a laboratory representative to call at the house of the patient, one-half of the regular fee is charged.

The x-ray laboratories have likewise agreed to perform the service required of these part-pay patients at 25 per cent less than their established rate, while similar coöperation was given by the Alameda County Pharmaceutical Association, members of which have agreed to provide standard drugs at low prices to part-pay patients.

Finally, an arbitration committee has been appointed to which shall be referred any question of policy or complaint of member, and a decision of the committee shall be final.

HOW THE PLAN AFFECTS THE PHYSICIAN

We now see the individual physician working under this plan as the master of his own private clinic rather than a worker in a public clinic for the low-income group. Conditions which prevail today indicate that the patient of low income is entitled to a lower fee consideration, but it is quite possible he may presently graduate into the higher

economic classification, fully able to finance his medical problems at the standard fees. The physician, therefore, through his generous coöperation, will have added to his practice and in the meantime has received something for his services. As for the patient, he has maintained his self-respect by avoiding indigency and paternalism, and thus may also have escaped a pernicious habit, destructive of his morale. Moreover he has been given good medical care, which, from his standpoint, is perhaps the most important consideration of all.

While it is desired to avoid unduly hasty conclusions, it now appears that the plan, operating since January 1 of this year, has been eminently satisfactory to both the physicians and the patients. During the month of February, 151 patients were referred to private physicians on the volunteer list, and the total since the plan went into operation is 506.

CREDIT RATING AS APPLIED TO THE PLAN

Oakland is the headquarters for the Retailers' Credit Association of Alameda County, a merchant-owned bureau of 500 members, with 350,000 names in its files, and with state and national affiliations. With this bureau the Alameda County Medical Association has entered into an agreement by which the credit bureau has established a medical file containing a complete record of all patients on the books of its members. The names of the patients are furnished to the bureau by individual doctors, who in turn are entitled to full credit information on any person listed in the medical file.

For this service each member-doctor agrees to pay an initial membership fee of five dollars and thereafter the sum of one dollar monthly. In addition to an unlimited number of telephone reports on information contained in the medical file, he is entitled to reports on information contained in the bureau's master file. Full standard written reports are furnished for seventy cents each.

Obviously this service will at present be used principally in connection with names not acquired under the part-pay plan, but the margin of difference may be small in some cases, if any exists at all. Therefore the bureau has agreed to furnish a rating on any part-pay patient, or indigent, whom the doctor believes may have emerged from the low-income group and is able to assume his medical obligations on a normal basis. The bureau undertakes to obtain and deliver the facts in the case, for which service a fee of one dollar is charged.

COÖPERATION GIVEN BY OTHER GROUPS

Important to the efficiency of the Alameda County Plan are the liaison relationships established between the Tuberculosis Association of Alameda County, the Alameda County Medical Association, and the County Institutions Commission. The first named, which is purely an eleemosynary organization deriving its support from the sale of Christmas seals, assists the county in its tuberculosis problems by providing a full-time

social worker in the county clinic to supervise and coordinate all of the tuberculosis social work; a physician devotes half-time to the clinic care of the tuberculous indigent; and two physicians in general practice pursue postgraduate study in the clinic. The latter two serve for a period of one year and their places are then filled by others in general practice, compensation for services being \$25 a month.

In the establishment of this liaison, complete coordination of existing facilities was sought and obtained. While no new major developments were found necessary, certain revisions in authority were made, and the superintendent of Arroyo Sanatorium, Dr. Chesley H. Bush, was placed in charge as chief of the tuberculosis clinics throughout the county.

In order that this plan of coöperation may smoothly dovetail with the Alameda County part-pay plan, those patients who are not entitled to county care are referred to the executive secretary of the Tuberculosis Association, who is also a trained social worker. He, in turn, refers these patients to one of the physicians on the volunteer list. Before referring the patient he explains the importance of the examination of all contacts. In return it is required that, for statistical purposes, the Tuberculosis Association shall request report on the skin test, and if this is positive, on the findings of the chest roentgen ray. This insures proper examination of the contacts. A definite appointment is made with the physician to whom the patient is referred and the family notified of such appointment. In this manner accurate results can be tabulated, and through the various health departments such further supervision can be given as may be indicated.

Under this procedure the physician retains the patient, the family receives the necessary care at a proper fee, and the health department also receives accurate information.

HOSPITAL SERVICE ON PERIODIC PLAN BASIS

In endeavoring to meet fully all of the numerous problems encountered in formulating a comprehensive plan for complete medical care, the medical profession must of necessity give careful consideration to the major problem of hospitalization. Numerous plans for medical care separately, hospital care separately, and the two combined, have been put into practice, but the task of combining the two successfully has more often than not proved an insurmountable hurdle.

Adopting the premise that neither can of itself stand complete, and likewise that only a nonprofit group supported equally by the medical profession and the hospitals can render effective service to a large portion of the people of moderate means, the Alameda County Medical Association is now projecting an organization for the furnishing of hospital service on a periodic payment basis. This is being done with the aid of the Department of Public Relations of the California Medical Association, through Dr. Walter M. Dickie, Director, and Mr. Hartley F. Peart, General Counsel of the California Medical Association, who are coöper-

ating with the council and officers of the county association.

This organization will be called the East Bay Mutual Hospitals, and will embrace in its membership every accredited hospital, other than county institutions, in Alameda County. The members of the East Bay Mutual Hospitals will select their directors from their own number, and the directors will select a medical director who shall be a member of the Alameda County Medical Association. All members of the Association will be eligible for appointment on the staff of the East Bay Mutual Hospitals.

Hospital service contracts will be issued at a cost to the holder of about \$12 per year, payable quarterly. A contract will entitle the holder to service in a member hospital of his own selection, the necessity for hospitalization to be determined by his attending physician, a staff member of the East Bay Mutual Hospitals.

The board of directors will be composed of representatives of the hospitals with which East Bay Mutual Hospitals holds contracts, and of members of the Alameda County Medical Association.

In formulating this plan it was borne in mind that unless all hospitals in good standing in a given locality are embraced within the scheme, it will not prove satisfactory in the long run. When all hospitals in the community are working under identical conditions there is no chance for undue competition or underbidding, nor is the freedom of choice of physician or hospital in any way affected.

Details of the plan are now being completed by a committee of doctors and hospital representatives in coöperation with the Department of Public Relations of the California Medical Association; and the articles of incorporation, by-laws, staff rules, hospital service contract, and the application for beneficiary contract are now being prepared.

IN CONCLUSION

Such is the Alameda County Plan, presented in brief, designed to solve the pressing problem of adequate, efficient and satisfactory medical care and hospitalization to persons of moderate income; and we believe that it fulfills most of the recommendations of the Committee on the Costs of Medical Care.

532 Fifteenth Street.

DISCUSSION OF PAPERS OF DOCTORS REINLE, HOLDEN AND BROWN

R. G. LELAND, M. D. (535 North Dearborn Street, Chicago, Illinois).—To those who have an uncontrollable desire to disorganize the time-proved methods of medical practice and to reorganize on the lines of big business, mass production methods of commercialism, the description of the organization of both the Alameda County and the San Diego Medical Society proposals must have been a disappointment. It is worthy of more than passing notice that both these proposals seem to be little more than a closer coöordination of the community's existing medical facilities, and the physicians who have perfected the details of the plans have, thus far, not deemed it necessary to incorporate the feature of big business acquisition, viz., solicitation—a feature which is prominent in most of the schemes advocated by the medical revolutionary enthusiasts.

During the past one or two years the American Medical Association has been frequently and not too tenderly criticized for failure to bring forth for the entire United States a master plan to be used by county or state medical societies for a reorganization of medical practice. A careful examination of such a proposal should convince any fair and open-minded physician that it is utterly impossible, impracticable, and unwarranted for the American Medical Association to adopt such a procedure. To adopt, publish and recommend "a plan" would be to infer that a change is necessary in the tested and proved methods of medical practice, and the arguments in support of the necessity for such a change have thus far been unconvincing. To assume that "a plan" devised to illustrate a "model or typical or master method" of practicing medicine is utterly absurd. The several sections of the United States differ widely as to population, industry, age, customs, traditions and many other features. To urge a single new method and thereby to infer that the present methods are unsound and should be discarded or altered would be to hasten or precipitate that sovietization of medicine which the medical profession is seeking to avoid. All advocates of commercial medical schemes, involving complicated, top-heavy overhead organization, expensive administration, and unethical solicitation should be required to present their true credentials to indicate the nature and extent of their extra-professional interests and affiliations and the manner in which they expect to profit financially, politically, or otherwise in the promotion of these fictitious, artificial and economically and ethically unsound proposals.

There never has been a time in medical history when certain obligations upon the medical profession have been more clearly defined. One of these duties is, obviously, to resist all efforts to commercialize medicine. Commercialization of medicine means a deterioration of medical service and a disruption of medical organization. The evils and effects of commercial mass production methods are as inimical to the welfare of the public as they are to the advancement, freedom, and independence of medicine. The history of medicine records an enviable record of brilliant achievements and the application of numerous humanitarian measures almost entirely devoid of the element of personal aggrandizement and individual monetary gain. During the past several decades the medical profession has advanced tremendously in its ability to cope with scientific problems. It is unbelievable that a profession which has demonstrated such ability in the scientific field will now, because of the pressure of profit-seeking propagandists and the exigency of a general economic unrest, surrender the control of the practice of medicine just when professional control is most necessary. The medical profession can and must cling to and defend, for the public good, all those elements of medical practice which demand a high quality of medical care and an ethical conduct of its members.

Although I respect the ability represented in perfecting an organization such as that described by Doctor Brown of Santa Barbara, I cannot agree that the medical group which he has perfected is representative of the average medical group throughout the United States. I regret that so much space and time has been devoted to the details of the business, property holding arrangements, income and purely personal or professional advantages of a group arrangement. Our primary consideration should be, rather, to direct our efforts to the development of the superior service, if any, that can be provided to the public and, secondarily and incidentally, the guarantee of personal or group financial security. If a medical group, no less than an individual physician, is able to justify its existence and methods on the basis of quality of medical services, with fairness in its dealings with patients and honorable ethical conduct with those physicians not members of the group, the financial security can usually be arranged quite naturally and normally.

A report of group practice will soon appear in the *Journal of the American Medical Association*. I hope

this report will receive careful study by all who may be interested in that method of medical practice.*

I am firmly convinced that the American public wants its family physicians rather than any highly organized complicated form of medical combination. The family doctor of average ability can successfully care for about 90 per cent of the illnesses in any American family. The allegation that a large section of the American public is suffering because of the paucity of medical facilities is unconvincing when one knows the nature and habits of the medical profession. I venture to predict that few, if any, physicians, even in these troublesome economic times, have refused medical care to any person regardless of his ability to pay. To be sure the political subdivisions of our states should pay for the care of the indigent sick; but it has not yet been demonstrated that commercial schemes which reduce the value of the medical dollar of the low-income group by 20 to 75 per cent can be justified even on the ground of spreading the cost over a large population group.

It appears that the writing of "medical plans" has become a fetish, and the profession is told that inaction in this matter will be fatal. Action in any direction is never justified solely to satisfy the desire to be doing something. Change is never justified unless the advantages which that change introduces are superior to the conditions which the change supplants. Our faith to detect the changes that must be made in the methods or administering medical care, if and when necessary, must be placed in the medical profession itself and not in profit seeking, commercially minded promoters.

In the study recently completed by the Bureau of Medical Economics less than 15 per cent of the 224 groups which answered the inquiry had adopted any arrangements for a flat rate charge for any type of medical service.

The comments of many indicated that the physicians doing group practice are not in favor of insurance arrangement for meeting the costs of medical care. A flat rate monthly payment plan such as that to which Doctor Brown referred, if adopted by a medical group under whatsoever pretext would at once give that group an unfair commercial advantage over the other physicians in the community and would both directly and indirectly set in motion a very undesirable form of public education. If the public is led to believe that for a small monthly payment medical care can be secured for all or most of the human ills, the natural and unavoidable inference will be that regular medical fees are unfair and exorbitant.

The fees derived under such an artificial and unnecessary scheme, applied during an abnormal economic period, will have become frozen when normal or prosperous conditions return and an upward revision of medical fees can then be made only with the greatest difficulties.

Insurance schemes do not sell themselves; they must be sold. This sales element involved in the distribution of medical services under insurance schemes constitutes a violation of the principles of professional conduct and the practice of medicine which for thousands of years have proved their fairness, soundness of doctrine and faithful adherence to the best interests of the public. Those who are promoting these commercial schemes during a temporary financial exigency are not only breaking faith with the thousands of honest and devoted physicians who have established and striven to keep unsullied the high ideals of the medical profession but also are encouraging the public to lose confidence in the medical profession to which it has always looked for honest, unselfish, personal service.

Not all of these promoters of unsound schemes are found among the lay business propagandists. Many professional promoters are urging that the principles of ethics be changed so that they may have some

* Report referred to was printed in *The Journal of the American Medical Association*, Issues of May 20, May 27, 1933.

"new" and "modern" principles to protect them as they "put over" these recently conceived pilfering plans.

To lessen the standards of the principles of ethics would be to cheapen and reduce the quality of medical care. To change the principles of ethics to satisfy certain conniving cliques would be to sell out to commercialism. To lower the standards of medical conduct would be to allow medicine to become a mere trade.

The principles of medical ethics are neither antiquated nor obsolete. These principles must govern in the practice of medicine now as never before. I believe that most physicians concur in the value and the interpretation of the principles of ethics in medicine, and it is this majority who must compel their general application.

If medicine be at the crossroads, then surely the medical profession and *not* commercial conjurers must select the correct course. And this selection will be made in the interests of the public no less than for the continued freedom, independence and self-respect of medicine itself.

CENTRAL CLINIC SERVICE—SAN DIEGO COUNTY PLAN*

A PLAN FOR REDUCED FEE MEDICAL CARE AND HOSPITALIZATION

By HALL G. HOLDER, M.D.
San Diego

THE San Diego Central Clinic Service is a community project developed and sponsored by the San Diego Health Council of the Community Chest. The Health Council, composed of representatives of the San Diego County Medical Society and thirty-two health and associated social agencies, realized the necessity of some reorganization in existing health facilities. There was duplication of effort, inefficient expenditure of money, and unnecessary free medical clinics. There was further realization that some change in the distributions of the cost of medical care must come with the changing social and economic order. Those interested were agreed that adequate scientific medical service should be accessible to everyone, regardless of income, and that physicians who rendered this service should be remunerated in some proportional degree. The plan was approved and adopted by the San Diego County Medical Society on December 14, 1932. Responsibility for medical supervision of the plan was placed with the Clinic Committee of the County Medical Society.

Maintenance funds for an experimental period of one year have been provided through subsidies from the Community Chest and the Board of Supervisors, the latter's appropriation being based on the expected saving to the County Hospital. The success of the plan to date has been gratifying, and is due to the whole-hearted support of our physicians, hospitals, Community Chest, Board of Supervisors, social agencies, nurses, druggists, and many other lines of business and agencies having direct or indirect interest in the cost of illness.

* From the Clinic Committee of the San Diego County Medical Association.

* Read before the second general meeting at the sixty-second annual session of the California Medical Association, Del Monte, April 24-27, 1933.

BASIC OBJECTS OF THE PLAN

The plan is predicated on adequate scientific medical care for every citizen, according to his ability to pay, as revealed by a thorough and standardized medical social service survey.

This social service is provided to all who apply or who are referred by a central exchange known as the Central Clinic Service. This centralization makes for efficiency in collecting and maintaining all pertinent data. In its present location in the Community Chest Building, the Central Clinic Service has access to social information from the common exchange of the other agencies. Furthermore, credit information is available through the Merchants' Central Credit Association.

The plan, as organized, is adapted to the existing institutions and agencies in San Diego and does not interfere with the established fundamentals of medical practice.

ORGANIZATION OF THE CENTRAL CLINIC SERVICE

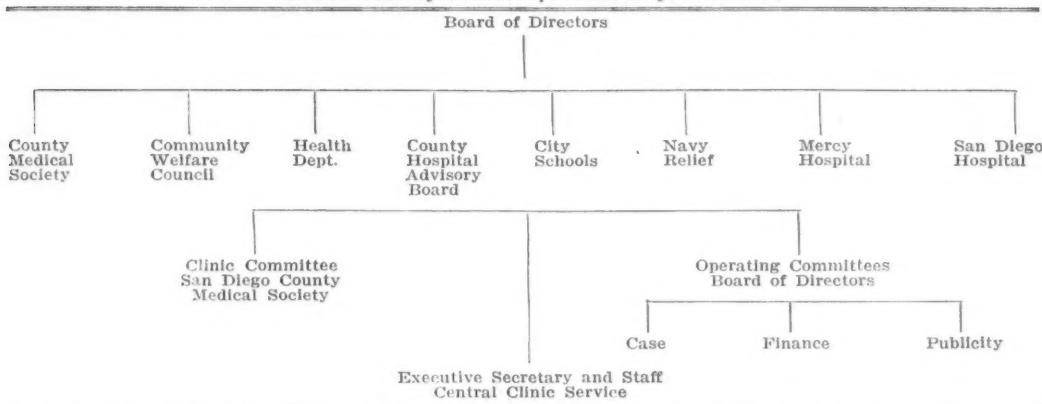
The board of directors of the Central Clinic Service is composed of representatives from the County Medical Society, Community Welfare Council, County and City Health Departments, County Hospital Advisory Board, Health and Development Departments of the City Schools, Navy Relief, Mercy and San Diego Hospitals. This places on the board at least four doctors who have had experience in community health and hospital problems. The board of directors employ an executive secretary, medical social workers, and clerks to maintain the service.

The operating committees of the board are: a case committee, finance committee, and a publicity committee, the latter interlocking membership with the publicity committee of the Community Chest and the Medical Society. Table 1 shows the general plan.

HOW THE PLAN OPERATES

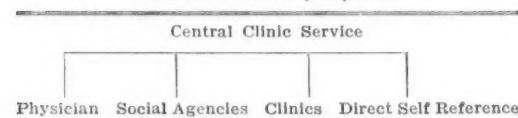
Patients are referred to the Central Clinic Service from four main sources: the physician, social agencies, clinics, or direct by the patient himself. By far the most important of these is the physician, who in the majority of instances has the first contact. This was emphasized by a recent survey of the admissions at the County Hospital, where it was found that 60 per cent of the patients were referred by physicians. It was further estimated that one-third of the monthly admissions would likely be absorbed by the Central Clinic Service when in full operation.

At the present time eligibility for hospital or clinic treatment at the County Hospital is based on the fact that the applicant cannot pay full fees for medical care. Previously there was no provision for treatment in San Diego of indigent or part-pay nonresidents, excepting emergency cases which are accepted at the County Hospital. In establishing the reduced fee plan, eligibility standards at the County Hospital have been revised. In this connection it is planned that all treatment clinics except the county be placed on a part-pay basis.

TABLE 1.—*Showing Relationships in San Diego Clinic Plan*

In order that patients be distributed efficiently, it is necessary to obtain a detailed picture of their social and economic status. Such a classification is impossible on the part of the social worker unless the physician furnish information as to probable length of illness and the cost of the treatment involved. After estimation of the above factors, the Central Clinic Service is expected to refer as many patients as possible to the offices of physicians, on a reduced fee basis.

No patient is referred to another service without consultation with the patient's physician.

TABLE 2.—*Sources of Reference*

Should a patient apply direct to the Central Clinic Service and it is found that he has had a physician, the latter is consulted before any arrangement is made for treatment. The physician in each instance must accept the report of the social worker and agree to the part-pay plan worked out on the basis of the patient's financial responsibility. Should this be so low as to be impractical for acceptance in the physician's office, the patient may then be referred to a part-pay clinic. If further problems arise during the treatment on the reduced fee plan, such as need for additional care,

complications, or the need of hospitalization, then the Central Clinic Service is contacted to arrange a plan for the new situation. These patients are eligible to hospitalization on a reduced fee basis if their economic situation permits, otherwise they automatically become eligible for county care. Likewise, part-pay clinic patients may avail themselves of reduced fee hospitalization if possible. Indigent patients are sent to the County Hospital.

THE PHYSICIAN'S OFFICE IN THE PLAN

The keystone of the plan is the physician's office. Reduced fees arranged by the social worker are for the most part on a cash basis. The physician may elect to treat patients in his office at part-pay clinic rates. Should the financial status of a family or patient change, the physician applies to the Central Clinic Service for a check-up relative to a change of classification. It is distinctly understood that in accepting cases the physician agrees to the social plan for each patient as determined by the Central Clinic Service. Furthermore, all information furnished the Central Clinic Service relative to the medical situation and, conversely, financial information regarding patients or families, is held to be strictly confidential. In referring patients to the Central Clinic Service for investigation no mention of fees is made to the patient by the doctor, as these are to be apportioned according to the ability of the patient to pay as determined by the social investigation.

The pediatricians in conference with the health department have recommended a plan for chil-

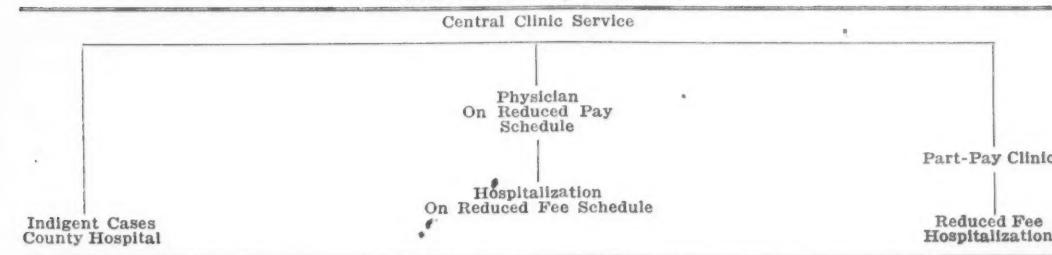
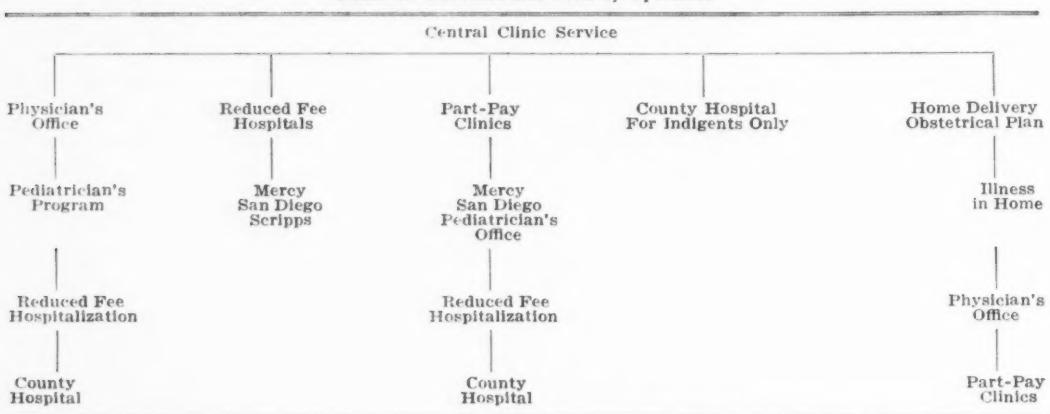
TABLE 3.—*Sources of Distribution*

TABLE 4.—*Facilities and Plan of Operation*

dren which has been made a part of the general plan. Diagnostic and treatment clinics for children will be conducted in the physician's office under the proper classification, as determined by the Central Clinic Service.

It was further recommended that a concerted effort be made through the health department and school organizations to have all immunization against diphtheria and smallpox made hereafter in these private low fee clinics. In this connection an advertising campaign was instituted early in the school year, announcing that immunization would be done for a stated period at reduced fees in the physician's offices. Children whose parents were unable to pay the reduced fee would be immunized free of charge, the health department furnishing the necessary materials.

The home delivery obstetrical plan would permit adequate obstetrical care in the home at a lower fee than hospitalization permits, and may be carried on from the physician's office or from central clinics, for pre- and postpartum care of these patients in the districts where they are most abundant. Such a program provides for proper equipment and nursing assistance through the aid of the Visiting Nurses' Bureau.

PART-PAY CLINIC FEES

Fees for part-pay clinics are as follows: Registration fee of one dollar for the first visit and diagnosis. In this instance the physician is asked to contribute his services gratis, as twenty-five cents of the fee will be allotted the clinic and the remaining seventy-five cents will go toward financing the maintenance of the Central Clinic Service. For all subsequent visits the patient will be charged fifty cents, twenty-five cents of which will go to the clinic, and twenty-five cents to the physician. Laboratory work will be charged for on the basis of fifty cents per examination; physiotherapy at fifty cents per treatment; and roentgen-ray diagnosis practically at cost.

REDUCED FEE HOSPITALIZATION

Hospitalization at reduced fees for patients certified as entitled to this service is arranged on the following basis:

Medical patients: ward bed, \$3; two-bed ward bed, \$3.25; and private rooms, \$3.50. This fee includes all roentgen-ray examinations, laboratory work, and medication with the exception of certain expensive drugs and sera. It is to be understood that these patients will accept ward beds unless the attending physician indicates that the nature of the case requires other accommodations. For surgical and obstetrical patients, in addition to the laboratory work and medicines, fees for delivery room and operating room will be included at the following rates: ward bed, \$3.50; two-bed ward, \$4; and private room, \$4.50. This plan is to operate on a cash basis for both the hospital and physician, although the latter will accept regular monthly payments when necessary. The medical or surgical fees will in no instance exceed the cost of hospitalization, but in most cases should be approximately the same. For example, the ordinary surgical patient remaining in the hospital about two weeks would represent \$50 as the cost of hospitalization, and the statement of the surgeon would be for a similar amount. The anesthetist and assistant are arranged for at proportionate fees. An individual or family capable of paying more than \$150 cash or in short-time installments would not be entitled to this reduced fee service.

Major illnesses in the home are cared for in a similar way on the basis of that part of the regular fee which the social investigation would show the patient could pay.

The problem of the allocation of patients referred to the Central Clinic Service when patients express no choice of a physician, is handled by assignment of such patients in alphabetical rotation to those physicians who have signed with the Central Clinic Service as interested in the different fields of medical practice.

COÖPERATING AGENCIES

An interesting development has been the number of agencies willing to coöperate. The nurses of the Mercy Hospital Alumnae Association provide twelve-hour nursing service at a minimum of \$3 a day, the determination of the need for such service being the responsibility of the physician and not the patient. The ambulance companies, optical

TABLE 5.—*Analysis of First Quarter's Work—Central Clinic Service*

For the Period, January 3 to March 31, 1933

Total number of hospitalizations arranged.....	70
Total number of hospital days.....	915
Approximate number of hospital days, medical patients.....	50
Approximate number of hospital days, surgical patients.....	865
Total number of cases referred to physicians' offices.....	119
(19.3 per cent at full fee.)	
Total number of part-pay clinic patients.....	87
Total number of patients referred by C. C. S. to County Hospital.....	47
(13 per cent had previous County Hospital records.)	

supply houses, and the Retail Druggists' Association have volunteered to give generous reductions to those patients certified as entitled to such reductions by the Central Clinic Service. Special colored prescription blanks have been furnished to identify these patients. Such blanks entitle the bearers to this discount upon presentation at any drug store in the city.

CRITICISMS OF THE PLAN

Criticisms of the plan include: one, that it would tend to lower fees; and two, that it is a step toward state medicine.

In reply to the first criticism, one might state that the plan maintains regular fees, because reduced fees are only available to those who through medical social service investigation seem entitled to this consideration. All other patients who receive medical attention must employ a physician at regular fees, as no other service is available under this central control of medical facilities. If there is any reduction in regular fees it is done by the physician himself and, therefore, the responsibility for maintenance of a regular fee schedule rests squarely upon the members of the profession.

In regard to the criticism that the plan fosters state medicine, let me emphasize there is no municipal, governmental, or political control of this plan. The plan is under the control of the county medical society, includes all its members, and guarantees free choice of the physician by the patient. It is not operated for profit. It promotes the best scientific medical practice and removes the possibility of unethical competition because it fixes a fee schedule. Lastly, it is adaptable to present agencies and fundamentals of medical practice and therefore cannot, in fairness, be accused of tending toward state medicine.

ANALYSIS OF THE FIRST QUARTER'S WORK

The first three months' operation of the plan has shown the physicians to be enthusiastic about it and coöperating splendidly. The hospitals have expressed their entire satisfaction with the original arrangements and have stated their willingness to continue indefinitely. From the standpoint of the patients served, the results have been most gratifying. The striking response of people to the idea of a complete financial arrangement for an illness is most instructive. Many times the social worker has found individuals and families willing to provide for total fees which they had previously thought impossible; happy and contented to

TABLE 6.—*Analysis of First Quarter's Work—Allocations and References—Central Clinic Service*

For the Period, January 3 to March 31, 1933

<i>Analysis of Allocation of Patients</i>	
Patients referred to physicians	119
Patients referred to Mercy Clinic	42
Patients referred to San Diego Clinic	45
Patients referred to hospitals	70
Patients referred to County Hospital	31
Patients referred back to County Hospital	16
Patients referred to other plans	22
Patients referred to Venereal Clinic	10
Patients referred to Venereal Health Department	44
Patients referred incomplete	52
Total	451
<i>Sources of Reference of Patients</i>	
Referred by County Hospital	70
Referred by self	60
Referred by physicians	171
Referred by school clinics	25
Referred by Mercy Clinic	37
Referred by San Diego Clinic	7
Referred by Venereal Clinic	54
Referred by other agencies	27
Total	451

know the exact cost and to retain the physician of their choice and to maintain their own independence and self-respect. The psychology of this attitude, from the standpoint of the profession, is important in educating the public in meeting the cost of illness.

As time goes on arrangements are being made for complete correlation of the Social Service Department of the County Hospital with that of the Central Clinic Service.

The immunization program, widely advertised in the press and by radio, has been most successful. Nearly two thousand immunizations have been completed in the physician's offices to date. The closest coöperation is maintained with the health department in reporting cases immunized so as to make the program efficient from a public health standpoint.

Table 5 shows the high proportion of surgical patients needing this service which, due to the increased expense of surgical treatment, is a natural trend. Of the large proportion of patients who were referred to the physicians' offices, 20 per cent could pay full fees and were not entitled to reduced fee care. To date the need for the Part-Pay Clinic is much below our expectations, showing that arrangements in the physicians' offices can be satisfactorily made in the great majority of cases. Of the patients who were referred direct to the County Hospital, 13 per cent had received previous County Hospital care. The total fees paid by the Central Clinic Service to physicians, surgeons, hospitals, laboratories, etc., was \$6,723.50.

Table 6 shows the reference sources and allocation of 451 patients who were registered in the first quarter. It is noteworthy that sixty patients applied direct to the Central Clinic Service. Of this number only twenty-eight had no physician. These were assigned in alphabetical rotation to members of the society who had registered for this work with the Central Clinic Service.

In conclusion, I wish to acknowledge and thank the many professional and lay groups whose interest and efforts have made this experiment possible.

LIVING GRAFTS OF ENDOCRINE GLANDS*

By HARVEY B. STONE, M. D.
JAMES C. OWINGS, M. D.

AND

GEORGE O. GEY, B. S.
Baltimore, Maryland

II†

COMMENT ON SOME STUDIES

STARTING with these basic conditions we carried through numerous experiments, many of which failed. We shall not report in detail those types of experiment that proved unsuccessful, but mention them in outline to complete the record of our studies and to show how we arrived at the more successful methods. With the idea of imitating the conditions under which tissue cultures are grown in various containers, we prepared cavities in the bone and cartilage. The rigid walls of such cavities we hoped would protect the growing graft from surrounding tissue pressure. The gland to be implanted was clipped and teased with fine instruments into tiny fragments. These were picked up with a pipette and injected into the prepared cavity with some serum. All of these experiments failed. Figure 1 shows such an attempted graft of thyroid after seventeen days. It will be seen that only a "ghost" of thyroid structure is left and that inflammatory reaction is pronounced. We felt that the use of the bone cavities had not prevented the ingrowth of fibrosing tissue as we had hoped, and sought other beds in which to plant the grafts. Following the lead of Halsted and others, the spleen was selected for its vascularity. In these experiments a better result was secured—Figures 2 and 3—but many grafts did not survive in the presence of extravasations of blood about them. Again following Halsted, we utilized the preperitoneal space behind the rectus abdominus muscle, placing the minced tissue in shallow rings of collodion. This also proved unsatisfactory. The adrenal gland was also utilized, with some success—Figures 4 and 5. Finally we decided that the loose areolar tissue of the axillae or groins offered the advantages we sought—freedom from pressure, closeness to good blood supply without the drawback of hemorrhage into the cavity made to receive the graft, and ease of access. As will be related shortly, our best results were obtained with this site of implantation.

As the work went on and failures accumulated with only occasional partial success, we became more and more convinced that besides the provision of a site that was suitable from mechanical and circulatory aspects, cognizance must be taken of the problem of biological and chemical compatibility between graft tissue and host body fluids.

* From the Surgical Hunterian and Surgical Pathology Laboratories, Department of Surgery, Johns Hopkins University.

† Guest-speaker paper read before the general meeting of the California Medical Association at the sixty-second annual session, Del Monte, April 24-27, 1933.

† Part I of this article was printed in CALIFORNIA AND WESTERN MEDICINE, June, 1933, page 409.

In seeking a solution of this problem, the resources of tissue culture technique again suggested a method of attack. It is well known to those familiar with tissue culture that many tissues will *survive* in artificial media for short periods of time, but will *grow* only in fluids from animal sources, and these frequently have little or no relation to the body fluids of the animal from which the tissue was derived, or even to its species. Provided that certain chemical and thermal qualifications are met, plus absence of bacterial contamination, the question of specificity of the source of nutrient media for some types of tissue maintained by tissue cultures seems not to be important within rather broad limits. For other types, marked specificity seems indicated. Thus, in the former instance, cat tissue cultures may be grown in a medium made up from the less specific constituents of dog's blood with additions of other substances. This fact suggested a lead that might prove fruitful. If a tissue culture is grown for a lengthy period in a medium derived from one animal, may it not become adapted to the individual serum chemistry of that animal? Should this adjustment take place in the comparatively simple environment of an artificial tissue culture set-up, would not the culture, if grafted into the animal giving the serum, prove better adapted to its host than if no such preliminary chemical acclimating had taken place? The idea seemed worth a trial, and since our results in this particular type of experiment are the most promising, we will give in detail the protocol of such an experiment.

Experiment.—On June 26, 1932, dog P. O. 1 was anesthetized after the usual dose of one-quarter grain of morphia and the thyroid exposed under aseptic conditions.

One lobe of the thyroid (right) was completely removed and the incision closed with black silk. A portion of this lobe, about one-third of its total volume, was cut into pieces of such a size as is suitable to culture, and cultures were made. P. O. 2 was bled by cardiac puncture in order to get serum and plasma for use in the culture medium. The cultures were carried on for thirty days, being transferred every three or four days, according to their degree of activity and their effect upon the medium. On July 24 about two-thirds of the left lobe of the thyroid was removed from P. O. 2 in order to produce a deficiency. The right lobe of this dog had been removed on June 26 in order to carry out a similar experiment, and used for grafts to P. O. 1. One parathyroid was left. On July 27, under general anesthesia and aseptic technique, two transplants were made from tissue cultures of P. O. 1, grown in medium containing serum and plasma of P. O. 2—one transplant in the left groin, and the other into the left rectus muscle of P. O. 2. These were, therefore, "tissue culture adapted" (thirty-day interval) iso grafts. The dog was kept on the usual laboratory diet, with no medication until October 10, at which time, eighty days after implanting the tissue which had been grown previously in culture for thirty days, both grafts were removed, their position having been marked by black silk sutures in the rectus and by the injection of India ink in the skin of the groin. No functional tests were made on the dog, but he did not show any evidence of thyroid deficiency, which may well have been prevented by the amount of thyroid left in the neck rather than by the grafted tissue. Sections of the tissue removed showed no per-

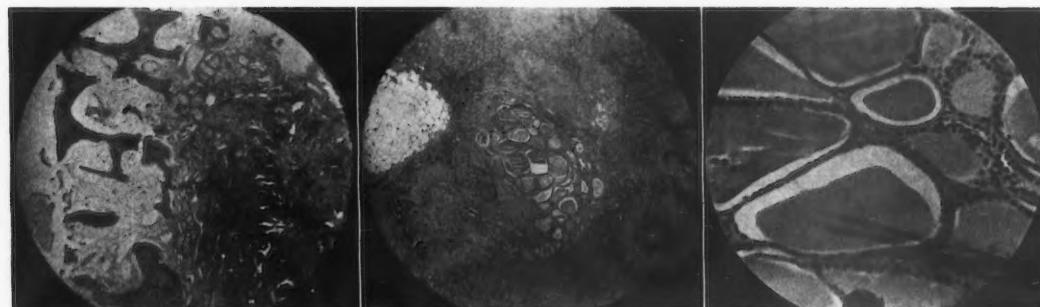


Fig. 1

Fig. 2

Fig. 3

Fig. 1.—Dog O. P. 2 (B)—Isograft of thyroid into cartilage seventeen days postoperatively.

Fig. 2.—Dog O. S. 7—Isograft of thyroid into spleen fourteen days postoperatively.

Fig. 3.—Dog O. S. 7—Higher magnification of isograft of thyroid into spleen fourteen days postoperatively to show preservation of cells and colloid formation.

sistence of the thyroid implant in the muscle, but in that taken from the groin a definite mass of thyroid tissue, 5 to 6 millimeters in diameter was found. Microscopically this showed two very different types of thyroid tissue, one in which there was very little colloid with very small alveoli, and the other with large, irregular alveoli, but still not very abundant colloid. The more cellular portion of the tissue looked almost like a new growth or a fetal adenoma of the thyroid, whereas the other portion looked more like a hypertrophic change. There was one area in the section that showed what might be considered a transition from one type to the other—Figures 6, 7, and 8. It is very interesting to note at this point the fact that cells from cell culture, such as will be shown in moving pictures taken of the growing thyroid cultures, can change from the sheet-like or branching forms which are seen there to the original thyroid architecture which is seen in the sections of the grafts eighty days after transplantation. The persistence of this graft for a period of eighty days led us to hope that we had accomplished our purpose, that is, that we had so changed the tissue to be grafted that it did not stir up an anaphylactic reaction and, therefore, was not disintegrated and cast off, as is usually the case. These two dogs were not matched nor grouped and nothing is known of their relationship. Therefore we cannot be sure, of course, that it is not an accidental successful take due to relationship, as sometimes apparently occurs.

TECHNIQUE IN HANDLING CULTURE GRAFTS

At this time it seems appropriate to describe briefly our technique in handling culture grafts in our more recent work in the transplantation of parathyroid. The routine procedure, evolved over the period of the last six months and which we are using now, is as follows: Two dogs are chosen without any regard to age, size, breed, sex, etc., and both operated upon on the same day, at which time one parathyroid is identified and left in position together with about half of one lobe of the thyroid gland. The rest of the thyroid gland and the other three parathyroids are removed. Blood is obtained by cardiac puncture for the determination of the normal level of the blood calcium at the time of operation, and also for serum and plasma to be used in the culture medium. Immediately after the first operation the dog is put on a low phosphorus diet and kept on it until we are ready to test the physiologic function of the graft. In the first cases when we were not absolutely certain of the identification of the parathyroids, a small portion of each glandule to be cultured was saved for microscopic section in order to

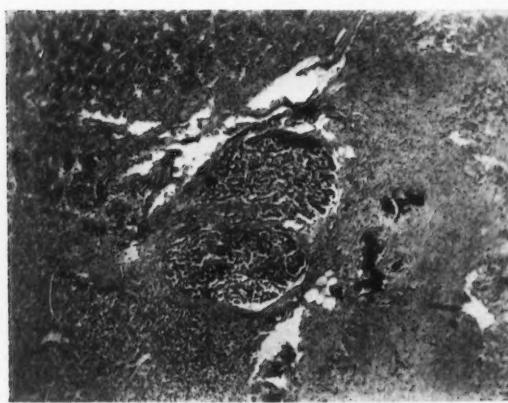


Fig. 4.—Dog O. P. 17—Isograft of parathyroid to adrenal twenty days postoperatively.

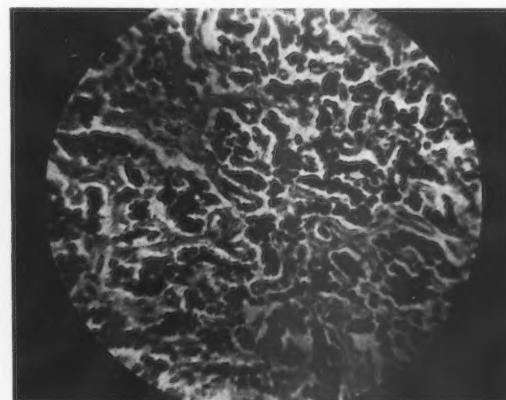


Fig. 5.—Dog O. P. 17—Higher magnification of isograft of parathyroid twenty days postoperatively to show details of cells and stroma.

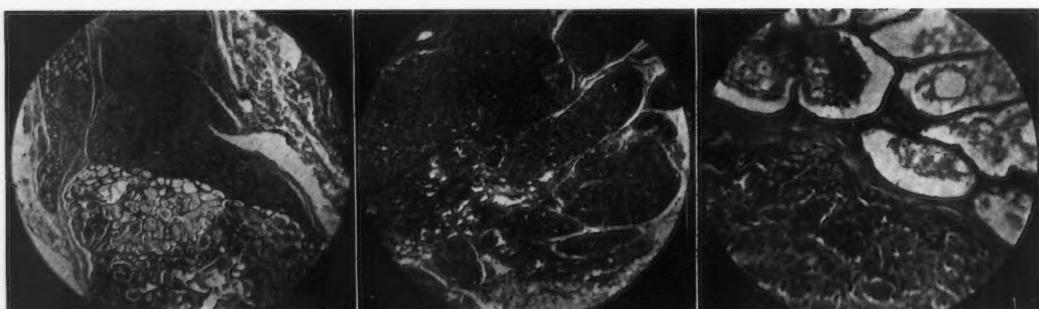


Fig. 6

Fig. 7

Fig. 8

Fig. 6.—Dog O. P. 2 (A)—Isograft of thyroid into subcutaneous tissue by cell culture method eighty days postoperatively.

Fig. 7.—Dog O. P. 2 (A)—Isograft of thyroid into subcutaneous tissue by cell culture method eighty days postoperatively, to show lobulation of growth.

Fig. 8.—Dog O. P. 2 (A)—Isograft of thyroid into subcutaneous tissue by cell culture method eighty days postoperatively, with higher magnification, to show details of the two types of tissue.

avoid the criticism that we might be culturing thyroid tissue instead of parathyroid and also for our own satisfaction. After considerable experience we found that we could easily tell thyroid from parathyroid tissue when it was cut in Ringer's solution, for the thyroid tissue exudes a stringy gelatinous material when it is cut, whereas the parathyroid when cut shows masses of cells which seem to fall out of the stroma in a stream like a whitish precipitate. We have confirmed this many times by histologic section and we now feel confident of being able to tell the two types by this difference when cut under saline solution. This may seem beside the point, but we frequently found tiny accessory lobules of thyroid in the capsule of the gland which were impossible to tell grossly from parathyroid by any method other than the cutting test. We have never found more than four parathyroids in any dog, and frequently not this many, in spite of various reports we have heard to the contrary. The parathyroid to be used for grafting is cut into very tiny segments about one to two millimeters in diameter and grown in tissue culture in a plasmatic medium containing beef embryo juice, an artificial serum saline and the serum and heparinized plasma of the dog who is to receive the graft. These cultures are carried on for a month, being transferred to fresh medium every three or four days. The idea is that the tissue will become so adapted to the essential elements of the blood of the recipient during this period of a month or more that when the transplant from tissue culture is made its antigenic properties will be so changed that it will not stir up any foreign protein reaction. It might seem at first that growing the donor's cells in the recipient's fluids by tissue culture might be the means of "diluting out" the nonviable antigenic substances of the donor, leaving the living cells of the donor as the only source of antigenic substance. The rôle of this adaptation by culture is not as yet clearly understood.

Motion pictures were taken of both the growing thyroid and parathyroid. At the end of the four-

week period the cultures are cut out of the medium and clotted in the recipient's fluids onto a very fine silk thread, which is then used to draw the mass of tissue into the site of implantation and tied in order to hold it in that position. A second blood calcium is taken at this time. After the grafts have been in for one month the last original parathyroid is removed and the third blood calcium is taken. For further proof of the function of the graft we intend to allow another month during which time the dog theoretically has no parathyroid tissue except that in the graft, but is still on a low phosphorus diet. We shall then put him on a regular diet to see if tetany ensues. If it still does not occur, the engrafted tissue will be removed as a final check and serial sections made. This should give us absolute proof both microscopically and physiologically of the success of the graft.

There are certain very striking facts to be noted in these experiments. First, not only survival of the implant occurs but definite and considerable growth in a relatively short period of time. Second, the resumption of characteristic architecture and structure, with at least the appearance of function, of a tissue that was implanted as tiny clumps of living cells bearing little resemblance to the original tissue. Third, the apparent adaptation of graft to host without signs of chemical or biological incompatibility, as evidenced by the absence of reaction about the graft, and the staining properties of its cells. We are, of course, not attempting to generalize on insufficient data, and it must be clearly understood that this is in the nature of a preliminary report. Nevertheless, we believe that we are justified in saying that the method just described holds out great promise for future progress. We have felt justified, on the basis of our experimental work, in carrying the method into clinical application. Thus far we have had opportunity to try it in only one instance, which is reported herewith.

(To be concluded)

**PROSTATIC OBSTRUCTION—DEVELOPMENT
OF ITS SURGICAL TREATMENT***

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II†

COMMENT

SO convinced have I become that preliminary drainage should be confined to cases in which the renal function must be improved or urinary infection diminished, that I have never hesitated to remove through the urethra the obstructing portion of the hypertrophied gland, if the renal function was normal and acute prostatitis absent, as soon as the diagnosis was established. Preliminary treatment, except to improve renal function or reduce infection, is a useless waste of the patient's time and may make him much worse. In approximately a fifth of the cases to be reported in this paper no preliminary preparation was given, yet no difference was noted in their postoperative course from those receiving preliminary drainage. Much as this changed conception regarding the importance of preliminary drainage diminishes the time necessary for the correction of urinary obstruction from prostatic enlargement, it is insignificant when compared to the time saved by the employment of transurethral methods as compared with perineal or suprapubic prostatectomy.

This newer method of treatment is based, it would seem, on the firmest of logical grounds, for it aims at the removal of the obstructing portion only and not the entire enlargement.

Young's Punch.

The development of the material in America dates from Young's presentation of his prostatic punch in 1911, at which time he stated: "The amount of tissue removed at suprapubic operation is often so small that it seems ridiculous to have to perform a suprapubic operation for its removal." Although the instrument did much to stimulate transurethral work in America, its use in any but median bar and obstruction of the contracted neck of the bladder was impossible because of lack of adequate vision and failure to provide any means of hemostasis. Braasch, in 1918, described his median bar excisor, which permitted adequate vision but also failed to provide for hemostasis, and so was limited in its application.

Caulk's Modification.

Caulk, in 1920, presented a modified Young punch in which hemostasis was provided by substituting a cautery blade for the tubular knife of the older instrument. Although Caulk's instrument was faulty in vision, the control of bleeding was a long step forward, and he must be given credit for keeping the attention of members of the profession centered on the problem of transurethral resection, and for demonstrating, in spite of most adverse criticism, that the relief of ob-

struction is feasible in many cases. While using Caulk's instrument in a series of seventy-two cases, I noticed that the procedure was likely to be followed by an acute febrile reaction that generally subsided on the fourth or fifth day but which was sometimes unduly prolonged. Following the use of the knife punch, such reactions had been the exception. It appeared, therefore, that a cauterized area in the neck of the bladder was more prone to secondary infection than a cleanly incised area. The interval required for healing a burn in comparison with healing a clean incision seemed about to double the time over which such an infection might take place. This fact led me to abandon the instrument and to use in its place a Braasch cystoscope of the same caliber as the Caulk instrument, in the barrel of which a fenestra similar to the Caulk instrument had been cut.

Author's Modification.

This instrument gives adequate vision of the operative field so that one can determine what portions of the obstructing tissue to remove first and what their relative size and position is to almost all anatomic landmarks, such as the verumontanum, ureteral orifices, and interureteric ridge. Vision is adequate and there is no difficulty in removing whatever obstructing tissue is necessary.

To control bleeding I at first removed the instrument and replaced it with a cystoscope, and with a flexible electrode lightly electrocoagulated the bleeding areas and touched each large arteriole which could be seen spurting in the irrigating fluid.

Since then the instrument has been modified in construction so that a multiple needle electrode is thrust into the tissue before the knife is passed, and so renders the course of the knife blade through the tissue more or less bloodless and reduces to a minimum the necessity of electrocoagulation of the tissue after excision. This procedure had been employed by both Day and Kirwin in a somewhat modified form, since in their instruments the coagulation is more extensive.

Other Instruments.

While these changes were being developed in the direct vision instrument, Stern was perfecting a lens instrument with which the obstructing tissue was resected by a reciprocating wire loop through which a high frequency current was passed. This instrument was later popularized by Davis, who demonstrated the possibilities of this form of resection and to whom most credit is due for the progress of transurethral resection during the last few years.

Following Davis's success, McCarthy produced his panendoscope, which is unexcelled as respects vision, and is equipped with a reciprocating loop which reaches out beyond the end of the instrument and resects the tissue as it is drawn back into the sheath. The loop is larger than in the original Stern instrument, therefore the operation can be carried on more rapidly. The instrument has become popular with urologists who prefer a lens instrument for doing this type of work.

* From the Section on Urology, The Mayo Clinic, Rochester, Minnesota.

† Stanley P. Black Memorial Lecture, Pasadena, California, January 16, 1933.

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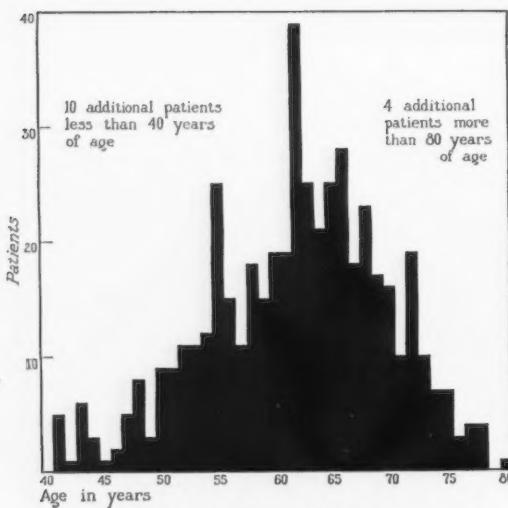


Fig. 2.—Ages of the 499 patients.

Other urologists, including Day, Cecil, Kirwin, and Foley, have developed instruments which, in the hands of their designers, have proved efficient.

PRINCIPLE OF THE OPERATIVE PROCEDURE

The method employed or the instrument used is not of great importance; the skill of the operator with whatever instrument he chooses is of far greater importance in determining success or failure. The principle of the procedure consists in removing in small pieces, under adequate vision and without the production of undue bleeding, all of the prostatic tissue which obstructs the urethra. If sufficient tissue is not removed completely to relieve the residual urine, an unsatisfactory convalescence is likely to occur. In such cases it is best to examine the patient after an interval of at least ten days. Usually it will be found that not sufficient tissue was removed originally, in which case the remaining obstructing tissue should be resected at once. In thirty (10.8 per cent) of the 276 cases in which operation was performed in 1932 at The Mayo Clinic, a second resection before the patient left the hospital was necessary to insure complete emptying of the bladder.

Critics of the method have stated that transurethral resection is open to the following objections: the results will not be permanent; fibroadenomatous hypertrophy having taken place the process will continue; the removal of only the obstructing tissue will of necessity be followed by the development of new obstructing tissue, and only by complete enucleation can this be corrected. In refutation of this contention Caulk has repeatedly called attention to the diminution in the bulk of a hypertrophied gland following the institution of suprapubic drainage. He holds that the same diminution occurs when the residual urine is removed; this is accomplished by rendering the patient capable of completely emptying the bladder by transurethral removal of the obstructing portion of the gland. That was demonstrated by 269 cases of adenomatous hypertrophy in which transurethral operation had been performed at the clinic

since January 1, 1927. In only two patients was it necessary to perform subsequent prostatectomy; in only five was it necessary to remove further obstructive tissue at a subsequent date, and in sixteen of the cases the transurethral operation was undertaken to remove obstruction which developed after prostatectomy. Certainly this would indicate that the procedure gives as much hope of relief as does prostatectomy.

RESULTS WITH TRANSURETHRAL OPERATIONS

Since January 1, 1927, 545 cases of urethral obstruction from prostatic enlargement or deformity have been treated by transurethral methods at the clinic. In forty-six of these cases the obstruction was the result of contracture of the vesical neck, and good functional results were obtained by incision with the Collings electrode. As no tissue was removed, the operation has been classified as transurethral sphincterotomy. In 499 other cases, in which the average age was sixty-four years (Fig. 2), tissue was removed in amounts varying from 1 to 48 grams (Fig. 3). In forty-eight of these cases either a Stern-Davis or Stern-McCarthy instrument, employing the principle of the wire loop, was used; whereas in the remaining 451 cases the instrument previously described and developed in the urologic section of The Mayo Clinic was employed.

In the last two years larger and larger glands have been successfully dealt with. It has been found necessary to perform complete prostatectomy in only two patients during the last four months, during which period transurethral treatment has been carried out in 142 cases. The

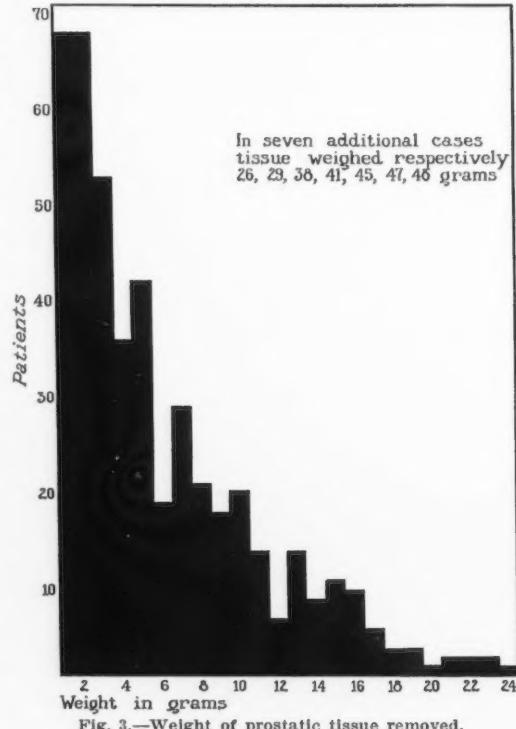


Fig. 3.—Weight of prostatic tissue removed.

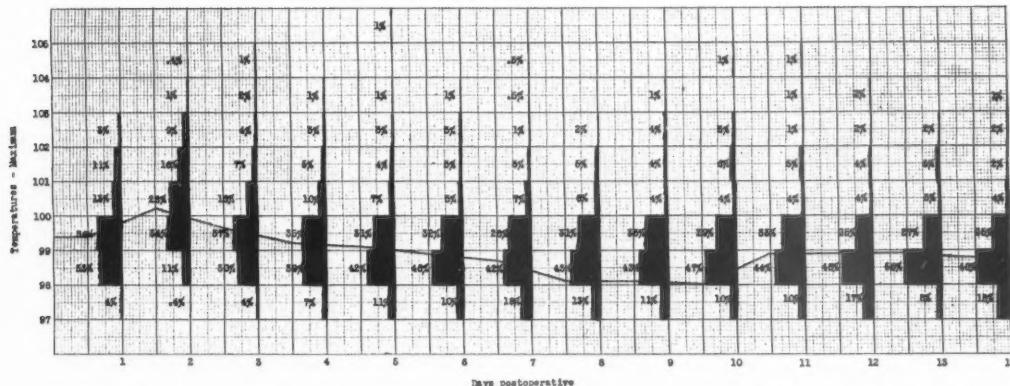


Fig. 4.—Maximal temperatures, Fahrenheit, on the different postoperative days in 276 patients treated in 1932.

largest amount of tissue removed at any one time weighed 48 grams. In the years 1929, 1930, and 1931, only 32.1 per cent of prostate glands removed suprapubically from 575 cases weighed more than 50 grams, so that from the standpoint of size there would seem to be few cases in which this method of treatment is not applicable.

As a whole, the patients are astonishingly free of postoperative complications. Of the 276 patients on whom operation was performed in 1932, only 38.7 per cent had a postoperative temperature higher than 101 degrees Fahrenheit (Fig. 4). The majority of patients (Fig. 5) leave the hospital on the fifth, sixth, or seventh day unless they have previously had a suprapubic cystostomy as preliminary preparation, in which case convalescence is prolonged by the time necessary for healing of the suprapubic fistula. In the last year cystostomy was done forty-four times (15.94 per cent of the cases), because of marked renal impairment or extensive urinary sepsis prior to removal of the obstruction through the urethra.

Bleeding is the most common postoperative complication, and it is the delayed rather than the immediate bleeding which gives the most concern. In the third week bleeding of more or less severity occurred in ten cases. In one patient cystostomy was necessary, and in two patients the loss of blood was severe enough to make transfusion seem advisable. The bladder usually fills rapidly with clots, and when these are emptied it is exceptional that a bleeding point can be found. The effort of the bladder to expel the clots seems to keep up the bleeding, and when they are evacuated the bleeding usually ceases. When the bleeding occurs within the first two or three days following operation, the bleeding point can usually be found and fulgurated. In the first one hundred cases, before this was fully appreciated, cystostomy was performed on two patients for the removal of clots. Since then this has never been necessary except in the case referred to, in which bleeding occurred on the twenty-first day after operation.

The most trouble with bleeding has occurred during the third week, when sloughs incident to fulguration are coming loose. In ten patients (2 per cent) bleeding during this period was severe

enough to require the removal of clots by the cystoscope, and transfusions were given twice. In eight patients some bleeding occurred late in convalescence, but not of an amount sufficient to require treatment other than rest and lavage. To summarize, I may say that bleeding has occurred as a complication twenty-eight times (5.21 per cent) among 499 patients, five times as a postoperative complication, fifteen times during convalescence, and eight times after the patient had left the hospital. It has never been a contributory cause to any of the deaths, of which there were seven (1.4 per cent), in the last six years. All deaths were the result of renal or pulmonary infection secondary to trauma and destruction of tissue incident to the operation. No deaths have occurred for more than a year, during which period 291 patients have been operated on by the transurethral method. Since August 1, all but two of the patients with prostatic hypertrophy seen at The Mayo Clinic were treated by this method, and 142

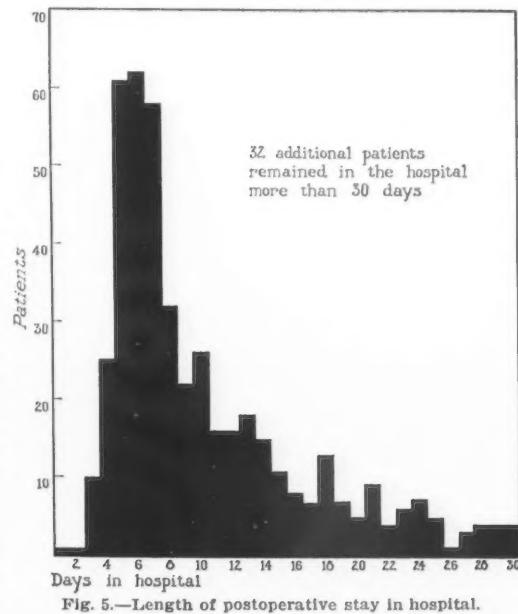


Fig. 5.—Length of postoperative stay in hospital.

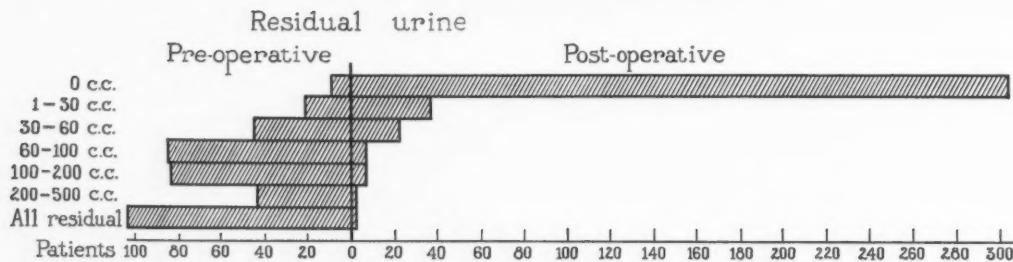


Fig. 6.—Residual urine before and after operation.

of these were given transurethral treatment. Much larger amounts of tissue had been removed from these 142 patients; and many were in such poor condition that prostatectomy had been refused; the patient was given the choice of wearing a suprapubic drain for life or consenting to transurethral removal of the obstruction.

IN CONCLUSION

In conclusion, I would emphasize that if preparation of patients suffering with urinary retention, the result of prostatic obstruction, is reserved for those with impaired renal function and severe infection, and the transurethral removal of the obstruction is substituted for some form of prostatectomy, the final functional results, as demonstrated by the reduction in residual urine (Fig. 6), seem to be equal, if not superior, to those obtained by more radical surgical procedures. Therefore, one hundred years after Guthrie's first efforts at the transurethral correction of prostatic obstruction, we are witnessing the realization of his endeavors, and another dread of advancing years has yielded to the progress of medicine.

The Mayo Clinic.

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CARDIOVASCULAR DISEASE IN DIABETES MELLITUS*

AN ANALYSIS OF FOUR HUNDRED AND TWENTY-FIVE CASES

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II†

WITH the above data at hand it is important that we regulate the diet of the cardiac diabetic so that wide fluctuations in the blood sugar be avoided. An adequate amount of fat, approximating 100 grams, acts as a buffer, and at the same time furnishes liberal calories and permits a very palatable diet. High fat diets are not to be tolerated, particularly in view of the tendency to produce hypercholesterolemia, which we now believe is a factor in furthering the advance of arteriosclerosis in diabetes. On the other hand low fat diets approximating 50 or 60 grams, which have been recommended by some, are not called for except for brief periods of time for the purpose of relieving acidosis or treating obesity.

RAPID FLUCTUATIONS IN BLOOD SUGAR TO BE AVOIDED

The average diabetic patient is satisfied with 120 to 150 grams of carbohydrate. Several observers have advocated very high carbohydrate allowances, and in some instances have gone to such extremes as to practically advocate unlimited amounts, including sugar, candy, and pastries. Careful investigation of the successful results of many of the cases treated by such unlimited means reveals in reality that the patients were not truly diabetic, but were elderly individuals with arteriosclerosis, who had previously been unnecessarily subjected to rigid dietary programs simply because a reducing substance had been found in the urine. Excessive carbohydrate in the diabetic calls for high insulin dosage, and alternating hyperglycemia and insulin shock is the result. One should be especially careful not to apply or practice such procedure when arteriosclerotic or hypertensive heart disease is a complicating feature, because of the potential danger of sudden fall of the circulating blood sugar inducing irreparable damage to the myocardium.

X-RAY EVIDENCE OF ARTERIOSCLEROSIS IN JUVENILE DIABETES

In view of the frequency of arteriosclerosis in diabetes it is of value to determine the time at which the early incipient changes begin. The x-ray has been employed in an attempt to demonstrate atherosomatous or arteriosclerotic changes by several observers. Clare Shepardson²⁸ studied

fifty diabetic patients under the age of forty who had the disease on an average of 6.9 years. Cases under five years' duration were excluded. Thirty-six per cent gave evidence of vascular sclerosis. He was not able to correlate the changes with the severity of the disease, but there was a relationship to duration. The incidence in his series was high partly because many were juvenile cases of long standing and had been under treatment for a number of years before discovery of insulin. In a group of 162 patients over forty, Bowen and Koenig²⁹ found positive x-ray evidences in 63 per cent. In 121 nondiabetic patients of a similar age period only 28 per cent were positive.

The changes in adult diabetics are evident, so we studied thirty cases in children in whom the onset of diabetes occurred before the age of sixteen. Special soft tissue technique was employed. The arteries and veins in the extremities in the normal individual can be recognized when imbedded solely in fat tissues, especially the subcutaneous fat. The posterior tibial vessels in the calcaneo-tibial space is one of the best regions for x-ray study. In only four instances (Table 4) were we able to state with frankness that atherosclerosis or arteriosclerosis existed; in one other case the result was doubtful. We considered the findings positive only when there was sufficient deposit in the vessel to produce distinct difference in radiopacity with the blood vessels. Duration of diabetes is not the prime factor in producing roentgenologic changes. Case number 1827 developed diabetes seventeen years ago at the age of eleven and was under treatment by Dr. F. M. Allen for seven years before insulin was discovered. Her diet now approximates 140 grams of carbohydrate with 38 units of insulin. Fewer arterial changes are noted in her case than in Case number 3072, who is now sixteen years old and has had the disease only four years. The duration of diabetes in the cases showing positive changes is seven, four, seventeen, eight and three years. Several children with duration over five years show normal roentgenograms. The reason for the low incidence in this series is probably due to the fact that all the cases except Case number 1827 were treated almost from the onset with insulin, which permitted more liberal diets, especially carbohydrate; and at no time have they been subjected to high fat diets. We have not observed hypercholesterolemia in any of our juvenile diabetics except temporarily in a few instances.

SUMMARY

Angina pectoris, coronary thrombosis and arteriosclerotic and hypertensive heart disease are to be recognized as common complications of diabetes. In view of the relationship of the onset of these complications to the onset of diabetes they should be regarded as complications rather than as clinical entities accompanying diabetes.

Attention is called to the importance of maintaining good nutrition in the presence of these

* From the Scripps Metabolic Clinic, La Jolla, San Diego, California.

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‡ Part I of this paper was printed in February CALIFORNIA AND WESTERN MEDICINE, page 74.

TABLE 3.—Sixteen cases of angina pectoris (3.8 per cent) and ten cases of coronary occlusion (2.4 per cent) encountered in 425 cases of diabetes. The combined incidence of these complications and arteriosclerotic and hypertensive heart disease (32 cases) gives a total of 13.6 per cent for the heart complications in this series.

Case No.	Sex	Age	Angina Pectoris			Other Complications
			Duration of Diabetes	Duration of Angina	Blood Pressure	
249	M	78	28	3	178/94	Incipient cataracts
5341	F	60	22	1	160/78	Cataracts, ulcers of feet
3566	M	63	16	10 da.	118/70	Congestive heart failure
4274	M	58	13	2	120/85	
3637	M	73	12	2	170/85	
6073	M	43	12	1	120/70	
4086	M	69	9	11	130/80	Congestive heart failure
5012	M	69	9	2	135/90	Congestive heart failure
133	F	62	6	...	210/100	
496	M	59	6	2	108/72	Hyperthyroidism
1619	M	68	6	1	125/65	Retinitis and gangrene
3225	F	71	4	1	180/110	Gangrene
1777	F	45	3	1	168/80	
413	M	49	2	2	108/77	Hyperthyroidism
3392	M	70	1	...	154/87	
4403	F	54	1	3	180/105	
Coronary Occlusion						
1004	M	52	19	6	134/88	
3671	F	65	18	3 wk.	184/108	
4033	F	53	16	3	144/82	
1	F	78	10	1	140/84	
195	M	70	10	...	180/70	
6139	M	53	9	...	105/85	
1853	F	59	5	2 wk.	122/70	
2095	M	66	4	1	122/74	
4100	F	64	13 mo.	13 mo.	150/90	
4430	M	68	...	onset	145/88	

complications. Undernutrition in the strict sense should be avoided. Abnormal fat diets, under 60 grams and over 100 grams, should be used only in special instances. Attention is also called to the danger of hypoglycemia in arteriosclerotic diabetics on account of the production of myocardial damage. The average diabetic patient is satisfied with 120 to 150 grams of carbohydrate. High carbohydrate diets, which necessitate high insulin dosage, predispose the diabetic to rapid fluctuations from hyperglycemia to insulin shock, and caution should be employed.

In roentgenological studies of the posterior tibial arteries in the calcaneotibial space in thirty diabetic children for the purpose of investigating early and incipient vascular changes, only five positive observations were found.

The Scripps Metabolic Clinic.

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TABLE 4.—Results of the roentgenological evidence of atheromatosis and arteriosclerosis in 30 children. Only five positive results noted. Only those children developing diabetes before the age of 16 are included. The duration of diabetes is calculated to date.

Sex	Age on Admission	Duration of Diabetes	Present Diet			Insulin	Present		X-Ray Evidence of Sclerosis
			Fro.	Fat	C. H.		Hgt.	Wgt.	
F	8	6	75	75	130	60	59	100	0
M	6	7	70	110	140	50	56	95	0
F	11	7	66	60	105	60	61	133	+
F	11	5	...	...	...	105	60	115	0
M	14	5	110	130	180	60	71	143	0
F	11	5	75	75	125	66	64	131	0
M	5	5	85	85	186	26	46	55	0
F	16	4	65	75	75	48	65	133	0
F	1½	4	75	75	125	18	37	36	0
F	8	3	75	130	135	40	56	63	0
F	14	3	70	80	125	45	65	116	0
M	13	8	70	90	115	...	...	...	0
M	13	7	70	130	130	82	...	133	0
F	11	6	70	75	100	70	62	127	0
F	12	1	70	75	145	32	60	92	0
M	18	4	70	110	150	12	66	114	0
M	10	½ mo.	60	80	120	18	52	61	0
F	3	1 mo.	55	60	140	10	41	36	0
F	36	22	65	75	80	12	59	105	0
F	10	3	...	...	...	...	...	...	0
M	5	2	65	100	135	44	49	60	0
F	12	6	60	100	100	40	60	112	0
F	30	19	75	70	110	40	66	147	+
M	20	6	100	100	125	65	71	140	0
M	20	8	100	100	140	70	72	160	0
F	5½	8	75	85	100	40	54	68	+
M	8	3	...	...	...	...	...	...	+
F	5	1	60	70	125	22	45	49	0
F	16	2	70	90	135	48	60	121	0
F	14	5	60	100	100	60	66	132	+
Average			73	88	126	45			

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DISCUSSION

HOWARD F. WEST, M. D. (1930 Wilshire Boulevard, Los Angeles).—This paper of Doctor Sherrill's should be of great value to cardiologists and surgeons as well as to those more specifically interested in the treatment of diabetes. Adequate warning that elderly mild diabetic patients should have special consideration and overtreatment of the diabetes avoided, has been given repeatedly. It was well demonstrated by Woodyatt, in 1924, (*Southern Medical Journal*, Vol. 167, p. 570). In spite of these acute myocardial disturbances induced by a relative hypoglycemia are unfortunately not rare. That anginal pain and other cardiac symptoms may be induced in patients with coronary disease by overrestriction in carbohydrate alone, without insulin, has been graphically shown by Strouse, Soskin, Katz, and Rubinfield (*Jour. A. M. A.*, Vol. 98, pp. 866-870, March 12, 1932). With insulin the danger is obviously more imminent. There is reason to believe that the patient with arteriosclerosis needs to maintain a higher blood sugar concentration for functional efficiency than the conventional normal figures.

Surgeons should remember that the patient with gangrene, ulcer, infection, or other manifestation of peripheral arteriosclerosis almost certainly has coronary sclerosis as well and with such patients changes in the diabetic state should be brought about cautiously. Carbohydrate must not be overly restricted and insulin hypoglycemia should never be risked. This does not imply that insulin should not be used if its need is demonstrated, but does urge extreme caution.

The successful management of diabetes as emphasized by Doctor Sherrill often means the skillful management of complications. Of these, those associated with arterial disease rank first in number. Adequate nutrition for the individual patient should be the goal of treatment rather than the attempt to obtain laboratory findings consistent with the standard variations of normal individuals.

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H. CLARE SHEPARDSON (384 Post Street, San Francisco).—Diabetes mellitus is essentially a disease of middle life and old age. Two-thirds of the cases begin after the age of forty years. In our day, the average life expectancy is increasing rapidly. Consequently the incidence of diabetes has increased, and with this increase the complicating conditions involving the cardiovascular system have assumed a new and important prominence which cannot be disregarded.

As Doctor Sherrill, in his excellent treatise, has pointed out, the presence of diabetes mellitus is conducive to the development of vascular sclerosis. A natural sequel of the increasing prevalence of arteriosclerosis in diabetic patients is the very frequent occurrence of myocardial injury due to coronary disease. A striking proportion of those afflicted with diabetes die of cardiac injury with or without actual coronary occlusion and infarction. Formerly coma was the most common cause of death in the diabetic individual, but since insulin has become available, this

cause of death has been largely replaced by arteriosclerosis. Proper treatment of the disease, therefore, involved not only alleviation of the metabolic disorder, but prevention of sequellae or, if already present, reduction of their damaging effects to a minimum. The physician must be certain that his treatment of the disease is not actually harmful to the patient. Consequently Doctor Sherrill is to be highly commended for advocating the maintenance of a constant blood sugar level averaging somewhat higher than the normal in those diabetic patients having cardiovascular disease. A high blood sugar is not of itself injurious to the myocardium. Glucose, and, of course, its stored form, glycogen, is an absolute necessity for the heart muscle and apparently exerts no deleterious effects through its presence. On the other hand, many writers have stressed the danger of suddenly reducing the carbohydrate in elderly individuals whose hearts are presumably somewhat diseased. A slight hyperglycemia insures adequate nourishment to the myocardium. Slightly undernourishing diets containing a moderately high carbohydrate element should be employed, thus making it possible to avoid large insulin dosages. Diabetes cannot tolerate large amounts of carbohydrate without the excessive use of insulin and the latter results in wide variations in the blood sugar content. Under such conditions the possibility of suddenly depriving the cardiac musculature of proper nourishment is obvious.

It seems apparent that more widespread utilization of the principles outlined by Doctor Sherrill will reduce the mortality from heart disease among diabetic patients and eventually result in an incidence but slightly greater than that to be found in normal persons.

*

R. A. KOCHER, M. D. (Carmel).—This very instructive presentation of cases again opens up the important question of a possible causal relationship between diabetes and degenerative changes in the circulatory system.

As pointed out by Doctor Sherrill, the view has long been held that diabetes is an etiologic factor in arteriosclerosis. Recent facts from autopsy evidence, as well as pathologic studies, have definitely established this causal relationship. This being true, one naturally asks what feature of diabetes is responsible for blood vessel degeneration, with resulting increased percentage of death from arteriosclerosis, or through resulting heart failure with coronary disease? Increasing evidence has accumulated to leave no doubt but that faulty fat metabolism is a contributory cause. Aschoff, Windaus, Klotz and others have given ample proof of the fact that high blood lipoids, including fatty acids and cholesterol, are directly related to early changes in the walls of the blood vessels; from the aorta to the smaller arterioles. The sequence of events is beautifully presented by facts gathered and presented by Aschoff, who, in conclusion, stated, "The character of the diet remains the most important factor."

This being the case, and, as has been recommended by Doctor Sherrill in this paper, it is of foremost importance in diabetic management to keep down the level of fat in the diet. Too much emphasis cannot be placed on this phase of diabetic treatment, that is, to so regulate the proportion of fat, carbohydrate and protein with respect to tolerance and insulin dosage as to insure at all times the complete oxidation of fat and thus prevent accumulation of deleterious fat derivatives in the blood, which definitely have been shown to lead to early arteriosclerosis and other attendant evils. Only by such management can we hope to keep down the rising percentage of deaths in diabetes from this complicating factor.

I am in complete accord with Doctor Sherrill with respect to the dangers of sudden reduction of blood sugar in cardiac diabetics as well as in the over-restriction of carbohydrate in the presence of coronary or myocardial diseases.

THE PHYSICIAN'S INTEREST IN THE MAKING OF A WILL*

By HARTLEY F. PEART, Esq.
Of the San Francisco Bar

IT is undoubtedly true, and natural, that the average man should shun all questions pertaining to his death. It is also very interesting to realize that many men, including specialists of no mean distinction, who would not dream of attempting to repair a leak in the plumbing or prepare the plans for a house, will, with cheerful nonchalance and without advice, write their own wills.

Let us take a typical case, that of John Brown, who has a family consisting of one daughter and his second wife, her stepmother. John Brown sits down to write out his own will and makes what he deems a fair and equal division of his property by stating that his daughter, by his first wife, shall have half of his property, and his present wife the other half. The will is entirely written, dated and signed by him, and so is a valid will. He has also taken out insurance on his life, some of the policies dated before and payable to his daughter, and some taken out after his second marriage and payable to his wife; the aggregate of insurance being equally divided between the daughter, on the one part, and the wife on the other. John Brown, being a prudent man, also secures a life insurance policy on his life, payable to his estate, in order that there may be plenty of cash available for payment of debts and expenses. And he puts his will in his safe deposit box, and dismisses the matter from his mind with the conviction that he has acted justly, and that a serious and necessary duty has been properly performed.

Let us see, however, what becomes of John Brown's estate and the proceeds of the insurance policies after his death. The widow is then informed by her attorney that she has a right to a family allowance which will be fixed by the probate judge and in which the daughter would share, if she were a minor; whereas, she being of age, no provision is made for her under this statute. One of the assets of the estate is the family home which was bought before the second marriage and, therefore, was paid for out of Brown's separate property. The widow is further advised by her attorney that the home can be set aside to her, as a probate homestead, for such time as the probate judge fixes, not beyond her life; and an order is made setting aside the home to her for her life. The daughter, being of age, can only occupy the home at the invitation of her stepmother, and her half interest in it begins only after the death of the stepmother. The widow is also informed that she is entitled to have set aside to her the household furniture and the proceeds of the life insurance policy payable to the estate (the annual premium being less than \$500) because both the furniture and the proceeds of the policy are property exempt from execution.

In preparing an inventory of the estate, it is found that a substantial portion, namely, two-fifths of the estate, was acquired by John Brown

* From the office of the general counsel of the California Medical Association. See also editorial comment, page 57.

after his second marriage. This two-fifths was not inherited by him nor given to him, and was not derived from property he had before his second marriage; and it is, therefore, community property of himself and his second wife. The widow's community interest in this two-fifths of his estate is not subject to the will of John Brown, but on his death one-half of the two-fifths in question goes to his widow. John Brown's estate, after the payment of the debts and expenses of administration, actually passes therefore, as follows: The widow receives the family allowance during probate which is a primary charge. She receives the home for her life; and if the home had been acquired from community property or community funds, she would have received it absolutely. The widow has received the household furniture and effects and the proceeds of the life insurance policy payable to the estate, which are exempt from execution. The widow, too, receives one-half of the two-fifths, which is community property, or one-fifth of the residue of the estate. The will is applied to the remaining three-fifths, and the daughter receives one-half thereof, and the widow one-half thereof.

The daughter has also had an unpleasant surprise following the death of her father, when told by the representatives of the life insurance companies that it would be necessary for her to obtain her stepmothers' waiver to any claim to the proceeds of the policies payable to the daughter, which the stepmother has refused to give. John Brown has paid a portion of the premiums (for the period during the second marriage) out of his earnings during that time, *i. e.*, community property, and the widow is therefore entitled to and receives a portion of the proceeds of these policies.

If John Brown were still living, he would certainly be greatly surprised to learn of the inroads made upon his estate by the statutes dealing with property exempt from execution, the provisions of the probate code for the protection and support of the family and the community property law; as his intention undoubtedly was to divide his property and his insurance equally between his daughter and his wife, after the payment of his debts and the costs of probate.

Physicians, by the very nature of their profession, and the close and confidential relations which they sustain to their patients, are consulted by many patients—sometimes of choice, and sometimes of necessity—concerning the preparation and execution of the will of the patient.

This little story of John Brown and his estate, necessarily a condensed and single illustration, clearly indicates that the drawing of a will should not be attempted, except with expert advice. There are, of course, many cases where such advice might not add materially to what the testator himself can do; but the law is intricate and complex, and every phase of the conditions relating to the testator's property, the situation and status of the members of his family, should be dealt with from a technical standpoint, if one is to obtain, as nearly as may be, the result desired.

MUSCLE TRAINING IN INDUSTRIAL INJURIES*

By T. E. P. GOCHER, M. D.
San Francisco

DISCUSSION by Harold M. F. Behneman, M. D., San Francisco; John Homer Woolsey, M. D., San Francisco.

A MUSCLE is a part of the body that causes movement. This is caused by the contraction of the muscle. The muscle should be in good condition to give the best result. This "condition" can best be obtained by correct training and exercise. The condition of the muscle will depend upon whether the motor, sensory, and trophic nerves are intact and functioning in a normal manner, and that the muscle substance is also normal.

Each muscle has a chief function of which it alone is the principal factor. This function can be developed and brought out by training. In movements where multiple muscle action occurs, care must be taken that the treatment given will exercise and develop the desired muscle. When powerful muscles are present in the area, too frequently they are the ones that benefit from the exercise, and not the weakened muscle.

Muscles may act against each other from lack of nerve control. Therefore it is important that when a muscle is desired to be contracted the opponent has full relaxation. This ability to relax will often have to be taught to the patient. Very frequently following an injury the patient tries too hard to move an area, and as a result an excess number of muscles are contracted and the motion of the joint is restricted.

Relaxation of a muscle is an active state. Full relaxation is very important and at times difficult to obtain. A muscle which is relaxed always has "tone" of some degree and is not flabby. An elongated muscle of normal consistency is firm and not flabby. The position of best rest of a muscle and its opponent is when their individual tensions are equal.

If a muscle is healthy the reaction to stimulation is sharp and well defined. When disease is present this reaction is diminished. The position of nerves in an area may vary considerably and so the motor points will vary, and must be located for each muscle.

DIAGNOSIS

The correct diagnosis is important if good results are to be expected in treating and training muscles. This is especially important in delayed muscle paralysis, which may occur from hemorrhage or secondary infection. The differentiation between a myositis, a neuritis, and neuralgia is often difficult. The treatment of each varies, and if given incorrectly may easily cause "unfortunate results." An incomplete rupture of muscle fibers is at times overlooked, and this may readily cause the patient much discomfort. Another diagnosis frequently overlooked is a serous tenosynovitis. In studying a series of cases, I found the following percentage of missed diagnosis:

* From the surgical department of the San Francisco medical office of the Aetna Life Insurance Company.

Incorrect diagnosis in 57.1 per cent. The missed diagnoses were, in my opinion:

	Per Cent
Incomplete rupture of fibers.....	7.5
Deep hematoma.....	18.0
Diagnosis of correct muscle injured.....	22.5
Fascitis of insertion of muscle.....	12.5
Myositis called neuritis or neuralgia.....	10.0
Serous tenosynovitis.....	20.0
Not recognize overworked or toxic muscles	10.0

RESULTS

Muscle training in itself is not often used alone, but in conjunction with other modalities excellent results can be obtained. Table 1 shows some of the results which can be obtained.

MUSCLE INJURIES

A muscle that has been traumatized should not be allowed to remain at rest for a long time or a fibrosis may develop. This condition may prolong the disability and cause pain and soreness, and may at times cause a "shortening" of the muscle. A muscle that has been "forced" may at times rupture, either partial or complete, and very frequently in these conditions a fibrosis develops at the area. Should this occur it will often limit the power and the contractile ability of the muscle. Therefore the sooner that movements are instituted in a muscle injury the less chance is there of a fibrosis developing.

A "pulled" muscle may be traumatized either at the tendon insertion or in the muscle fibers. The tendon insertion is the most common location for this injury. When this occurs, very frequently a very painful localized area develops. This may be very stubborn to cure unless treated correctly.

When a contusion of a muscle occurs, very often a hematoma develops; and this may organize and a very troublesome fibrosis develop, unless early treatment is instituted. Lacerations of varying degrees and strains may also occur. These conditions usually react well to appropriate treatment.

TREATMENT OF MUSCLE INJURIES

Treatment of muscle injuries is a study of importance. Unless this is done the disability period may be greatly prolonged and even a marked permanent disability result. In a series of cases I have found that if a muscle is kept at rest for two weeks or over, the average injured person loses control of that muscle. The muscle will then have to be trained to act in a correct and normal manner.

Heat.—Heat is frequently used in treating muscle injuries. One of the best sources for heat is from bakes. I have found that a good average time for this treatment is from fifteen to twenty minutes. Frequently heat is overused, and symptoms develop which may prolong the time of the disability. Heat causes a dilatation of the blood vessel of the area and improves the circulation. The radiant light tends to increase—the infra-red to decrease—congestion that is deep. Heat should be applied to a muscle before giving training exercises.

Massage.—I find that overtreatment with massage is frequent. The first treatment to an injured

TABLE 1.—Showing Results After Muscle Training

Area	Cases	No. of Treatments to Cure	Days Treated
Strain quadratus lumborum	23	4	4
Strain lumbar muscle.....	9	2	5
Strain multifidus muscle.....	17	6	10
Strain rhomboid muscles.....	22	8	12
Strain latissimus dorsi.....	10	2	2
Incomplete fiber rupture.....	26	8	10
Facial paresis, unilateral.....	6	9	16
Improve grip 50 per cent.....	20	8	14

area should be of a mild and gentle nature. Simple stroking is all that is frequently required. I have seen a heavy massage given to an injured area cause a patient to be laid up in bed for several days. Many times the aching, cramps, and tired feeling which overtreatment causes retard the healing of an injury longer than if no massage had been given.

Electricity.—Electricity correctly given is of great value. The "opening up" of the blood vessels and the electrical changes caused by the high frequency currents tone up the muscle and benefit it. The circulatory improvement is of value, as it brings nutrition to the injured area. The sinusoidal and faradic currents may be used to cause contractions and exercise muscles. They may be a benefit or a detriment to the muscles, depending on the treatment given. Muscles are easily over-exercised and overtired if they are weak.

In using electrical stimulation the contractions at first should be very slight and even "only felt" at times. I prefer the faradic current, as developed from the Bristlow coil, for individual muscle work. The sinusoidal current is best for "muscle group" work. The faradic current is very good for relieving "tired" muscles, if a fibrosis develops, and for the last stages of muscle training. The sinusoidal current is best for the early stages of muscle training, for treating myositis, and to improve the circulation.

Exercise.—Exercise should be given to all muscle injuries. At first they should be mild and care taken that the weakened muscle is not overtired. It is easy to overexercise a weakened muscle. The exercises should be given in the following order: assistive, passive, active and, lastly, resistive. Certain phases may at times be passed over very quickly. In giving resistive exercises, only sufficient resistance should be exercised to cause a good firm muscle contraction. Do not overtire the muscle. A good relaxation should be obtained after each contraction.

The signs of an overworked muscle are: lowered tonicity, lessened irritability, spasm not easily caused and readily "give out." Exercise makes the muscles worse, and rest relieves them. There may be a diffuse aching and throbbing at times.

The signs of a toxic or rheumatic muscle are: increased tonicity, increased irritability; and spasm and cramps are easily caused. Exercise improves, and rest makes them worse. The muscle has a

ready ability to contract. There may be a general aching present, which usually disappears following exercise.

MUSCLE TRAINING

When training a muscle or group of muscles to obtain good control and strength, that area should be placed at rest in such position that no strain is placed upon the muscles. The muscle to be trained should be in a position of physical rest so that gravity will assist it in any motion requiring contraction. The patient should relax both mentally and physically.

The principal action of the muscle or set of muscles to be trained should be ascertained so that exercises can be designed to give the best results. An illustration of this is that the biceps brachii muscle's principal action is supination of the forearm, and flexion of the elbow is a secondary motion. The supraspinatus muscle holds the head of the humerus in the glenoid cavity, while the deltoid abducts the arm to a right angle. Other important muscle actions are those of the tibialis anticus, which is the chief muscle in holding up the anteroposterior arch of the foot; and the peroneus longus muscle, which is the chief agency holding up the anterolateral arch of the foot.

Muscles may be trained individually or in groups. I believe that excellent results can be obtained in training many muscles, first as an individual and then as a group. An illustration of this is in training the fingers. The movements of the fingers are as follows: the deep flexors chiefly flex the distal joints, the superficial flexors the middle joints, and the lumbricals the proximal joints. The distal two joints of the fingers are extended, chiefly, by the interossei and the proximal joints by the extensor communis digitorum muscle. Each of these muscles can readily be trained individually and later as a whole. This form of treatment will give excellent results in the restoration of finger movements.

The ability to control the muscle should be first taught. With the area at rest the patient should be first taught to fully relax the muscle. This lesson is often very difficult and may at first take as long as ten or fifteen minutes to obtain a good relaxation. In teaching a muscle to relax be sure the position of the area is at rest and that there is no strain that may cause discomfort. If pain or soreness is present it is often very hard to get the desired relaxation. At times it may be necessary to cause a contraction of the opponent muscle before the patient can "sense" what is meant by relaxation. Sometimes I have the patient further force contracting the muscle to be relaxed and then attempt relaxation. Contracting a muscle against slight resistance often assists in getting "control." If, then, relaxation is not obtained, the faradic and sinusoidal currents may be resorted to. After relaxation has been obtained the patient should be shown the motion desired, and the same should be fully demonstrated to him. At times full relaxation is not obtained until after a number of treatments have been given. The patient's ability to relax should improve with each treatment.

The first exercise should be given with gravity assisting. The movements should be of a mild nature. First relaxation, then a contraction, but do not hold, and follow this by a good relaxation. Great care should be taken not to overexercise the area, as an overexercised muscle is very often difficult to return to its original state. It is far better to give only a short treatment than to overdo the treatment. All muscular contractions should be performed slowly and fully. Do not use sudden forced motions. If muscle spasm should develop, the area should be given a good full rest and as much relaxation obtained as possible before attempting further contraction. This condition is often obtained when a weakened muscle is treated too strongly, too frequently, and good relaxation is not allowed.

Very often a patient tries too hard to move a certain area and as a result more muscles are contracted than necessary. In order to remedy this the patient should be instructed to try to contract the desired muscles only mildly and not to use force until he has good control of them. This point is often illustrated when a patient contracts practically all of the muscles in his arm in attempting to move a finger.

When there is no active control the use of electricity can be resorted to. Whenever possible I prefer to use the faradic current that is obtained from a Bristlow coil. This is because of the excellent control that can be obtained from this current and the type of contraction obtained. The motor points of individual muscles can very readily be stimulated by this current and training given. The sinusoidal and galvanic currents may also be used. The progress of a muscle with training is often very slow until voluntary control is obtained.

In using the faradic current I first place the area at rest and in such a position that there is no strain on the muscles. I then demonstrate and instruct the patient in the movements that are desired. The motor point of the muscle is found and the minimum strength of the current is ascertained that will give a good contraction of the muscle. The muscle is then passively stretched several times. The patient is instructed to try to contract the muscles very slightly; and as he does this I apply the current through the area of the motor point and obtain only a slight full contraction. I find that when using the current this way I obtain better results than if I had used all full strength and caused a full muscle contraction. As control is developed I lessen the strength of the current until it is no longer needed, and a good active contraction can be obtained. The sinusoidal and galvanic currents may be used in a similar manner.

The patient must be instructed and have demonstrated the correct manner of performing his exercises at home. If he should not fully understand these exercises and the manner of performing them, the best results will not be obtained. Be sure to encourage him, and do not lose patience with him. Be careful, especially at first, that he does not overexercise.

TABLE 2.—Physical Therapy—Treatment Faults

Treatment Considered	Northern California		Southern California		General Average
	No.	20 Patients Per Cent	No.	8 Patients Per Cent	
Too much treatment given.....	12	60	5	62	61
Treatment not sufficient.....	5	25	3	27	26
Overtreatment.....	8	40	4	50	45
Poor control of bakes.....	11	55	6	75	65
Poor control of exercise.....	17	85	6	75	80
Poor muscle training.....	18	90	8	100	95
Explain what light work is.....	6	30	2	25	27½
Explain benefit of work.....	5	25	1	12	18%

MUSCLE-TRAINING FAULTS

In studying a series of cases, I found the following muscle-training faults and causes of prolonged disability periods.

	Per Cent
Delay in starting motion to an injured muscle	80
Overtreatment of injured muscles.....	82
Not exercising the weakened muscle to best advantage.....	90
Allowing a fibrosis to develop in injured area	78
No home exercises given in scientific manner	45
Patient did not fully understand home exercises.....	76
Considering patient able to treat self out of office.....	46

There are other causes for the poor results that are at times obtained, but the above will be sufficient to give some idea as to the causes why good results are not always obtained. The above table was obtained by asking and considering every question with each patient. Table 2 also presents a summary of some treatment faults.

CONCLUSIONS

Muscle injuries are very common, but good muscle training is an art that is possessed by only a few. Too often overtreatment is given, and as a result the disability period is prolonged. Exercise should be given mildly at first and not a 100 per cent work to the muscle. A weakened muscle may be called "paralyzed" when, if correctly exercised, it will be found to be able to actively contract. If the action of injured muscles is carefully studied out and appropriate training given, excellent results may be expected in practically every case.

A muscle may be considered "weakened" until it has a good full active contraction and a normal ability to relax well. This may take anywhere from a few days to many months to obtain. Remember, where there is contraction there is hope.

The accompanying table was made up by the author, following a personal study of twenty-eight patients receiving physical therapy in the main centers. All the points were carefully studied in each case. In each case the disability was prolonged, and an attempt was being made to ascertain the cause.

333 Pine Street.

DISCUSSION

HAROLD M. F. BEHNEMAN, M. D. (384 Post Street, San Francisco).—The interesting facts and figures presented by Doctor Gocher bring to mind the constant economic loss not only from the original disability, but from hasty, inaccurate diagnosis and faulty therapy. No more than any branch of medicine is physical

therapy a cure-all. It must be preceded by accurate diagnosis and administered by trained minds and hands. This series, compiled by Doctor Gocher, is not from one locality but from observation of cases on the entire coast. The definite conclusions he justly reaches should be a stimulus to medical practitioners to know physical medicine as they do chemotherapy. The technician too often bears the burden of the amount and kind of therapy a patient is to receive. We do not approve of a druggist prescribing for our patient, nor do we allow it. We have still less cause for referring "injured patients to a technician for treatment." Those of us who are fortunate enough to be in large medical centers with their clinics, see more faulty treatment than we do diagnosis. It is not uncommon to see increased disability from harmful therapy. Doctor Gocher's figures are in accord, as he found an average of 57.1 per cent incorrect diagnosis to 95 per cent poor muscle training, 80 per cent poorly controlled exercise, 65 per cent poorly controlled baking, and 61 per cent overtreatment. Aside from the injustice to the patient it is a severe economic loss to the industry, a part of which all of us indirectly bear.

Muscle training and rehabilitation probably require more knowledge in the fundamentals of physiology and anatomy than any part of physical medicine. Untold damage is done by the lack of this basic knowledge. Here we have definite proof of more overtreatment than faulty diagnosis. I venture to say this is a fair index of the average. We know that O_2 is necessary for life in general and the cell in particular. Able investigations have well proved the fact that we need no O_2 during muscle contractions, but a recovery period is necessary for its storage. When exercise has been prolonged into an oxygen debt it must be paid after the work has ceased. That important recovery period is the time of repayment. If more work is started before the end of this period, the oxygen debt is going to mount rapidly. As a result the lactic acid which normally appears in muscle contraction accumulates, which, if kept up, leads to rigor mortis of varying degrees. When this dangerous situation is reached glycogen disappears, being replaced by lactic acid, which finally may cause cessation of movement.

This danger holds forth in every muscle or muscle group undergoing training. Too rapid or prolonged contraction without sufficient recovery period is, in my mind, the chief cause of continued disability in countless cases.

Are not facts such as these Doctor Gocher presents here irrefutable arguments for the teaching of physical medicine in our medical school curriculum, and for the registration and control of technicians?

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JOHN HOMER WOOLSEY, M. D. (490 Post Street, San Francisco).—An understanding of individual muscle training, as outlined by Doctor Gocher, cannot be appreciated without observing a demonstration of the manner in which it should be carried out and the relatively early and satisfactory result. I would emphasize three points illustrated in Doctor Gocher's paper: (1) Correct diagnosis as to the muscle or muscles concerned with the injury; (2) the knowledge of the true action of the individual muscle for the treatment aspect; and (3) the "recovery period" of the muscle

in order to avoid overtreatment, which leads to additional injury. The author's statistics demonstrate the lack of attention given to these three important points in physiotherapy by a great number of the medical fraternity.

Physiotherapy, in my opinion, demands special and constant study. It is still in the developmental period, and so its use is bringing out valuable points heretofore known to but a few. One will find the "Handbook of Physical Therapy," published by the American Medical Association, containing contributions by the leading physiotherapists of our country, a worthwhile text. This text supports strongly the points that have been made in this excellent contribution by Doctor Gocher.

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DOCTOR GOCHER (Closing).—I wish to thank Doctors Behneman and Woolsey for their discussion of my paper. I have attempted to give a stimulus to this subject of muscle training, and believe that if more attention is paid to this important study there will be less disabilities and the economic loss of the worker will be minimized. Up to the present time I believe too much attention has been given to the "mass" muscle training and the "individual" muscle has been slighted. It is my hope that in the future more attention will be given to this important study; and if this is done I feel certain that the results obtained will be gratifying.

REFRACTION*

IS IT A MEDICAL OR A NON MEDICAL PROBLEM?

By T. W. KELSEY, M. D.
Sacramento

DISCUSSION by Dewey R. Powell, M. D., Stockton; M. N. Beigelman, M. D., Los Angeles; Joseph L. McCool, M. D., San Francisco.

WHEN one considers the great advance that scientific medicine has made during the present era, and the large amount of positive knowledge which has become available through laboratory research and otherwise, it is amazing that the profession still finds it necessary to defend definitely proved facts against the unscientific theories of disease which are forever being promulgated by quacks, cults, and others. If it were not, however, for the gullibility of mankind and the wonderful power of advertising, this condition might not prevail; but Barnum was right, and through advertising one can sell anything, regardless of merit, be it ideas, service or merchandise.

LAY PRESS MISINFORMATION

At the present time the public is being fairly deluged with misinformation regarding health and disease through the magazine, the newspaper, and the radio by those who seek to promote their fantastic claims to cure the sick by means of diet, mental suggestion, physical culture, spinal adjustments, drugless methods, etc.

Because of this, together with the fact that the medical profession does not advertise, the public is unable to know who's who in the treatment of disease, the result being that anyone who has a pleasing personality and a good press agent always gets a following regardless of qualifications and

previous training for the work he is doing. Cults have thus arisen in competition with every branch of scientific medicine.

This is especially true so far as ophthalmology is concerned. The time was when everyone consulted an ophthalmologist when he had anything wrong with his eyes. Not so today. During recent years, ophthalmologists, through no fault of their own, have found themselves many times to be in direct competition with department stores and a large commercial group who designate themselves by various names, such as refracting optician, optometrist, optical specialist, doctor of optics, etc. Not being a part of the medical profession, this latter group has resorted to newspaper advertisements and other publicity methods which ethical physicians have steadfastly refused to employ. By reason of this they have not only made decided inroads into the legitimate field of ophthalmology, but they have also caused many people to believe that refraction is purely a mechanical procedure and not necessarily a medical problem.

REFRACTION A MEDICAL PROBLEM

In this paper I shall endeavor to prove that refraction is a medical problem in all cases and should be entrusted only to the medical eye specialist.

To begin with there are many local eye diseases and many local eye manifestations of general diseases elsewhere in the body that may be responsible for the eye symptoms of which patients complain. If the one consulted has not had the background of a medical education he is in no position either to diagnose the condition or prescribe the right treatment for the patient.

Of the local eye conditions, mention must be made of all diseases of the lids, lachrymal apparatus, eye muscles, conjunctiva, and cornea externally, while internally one frequently finds some disease of the iris, lens, ciliary body, retina, choroid, optic nerve and vitreous, to be responsible for the symptoms.

Of general diseases with eye manifestation, there are so many that it would be difficult to enumerate them all. The most prominent of these, however, are syphilis, tuberculosis, nephritis, diabetes, arteriosclerosis, brain tumor, and focal infections. In fact there is no other organ in the body that is subject to so many diseases, both local and general, as is the eye.

If for no other reason than the one just mentioned, all eye conditions should be cared for only by medical specialists. Also, when one's vision begins to fail or other eye symptoms, such as headache, develop, the patient is unable to judge whether the symptoms of which he complains is the result of a refractive error or some local or general disease. This being true, the patient should at least consult someone who is familiar with both refraction and diseases of the eye, as well as diseases in general, if he would do the best thing for himself.

For the sake of argument let us assume that the symptoms of which the patient complains are

* Read before the Eye, Ear, Nose and Throat Section of the California Medical Association, at the sixty-first annual session, Pasadena, May 2-5, 1932.

the result of a refractive error and that glasses are needed to correct the difficulty. Whom should he consult? That he should consult an ophthalmologist for refractive errors is just as reasonable as it would be that he should call in a surgeon and not a splint or brace maker to set a broken leg.

METHODS OF REFRACTION

In discussing this phase of the subject let us review the methods of refraction employed by both the medical and the nonmedical groups. In doing so I shall endeavor to be absolutely fair, and shall also refrain from technicalities as far as possible.

To begin with, every refractionist in both groups must have certain basic instruments and appliances with which to work. Of these there is a large variety upon the market, and all have the privilege of purchasing any or all of them as they see fit. In this regard both groups are equal. Not so with the methods of making examinations.

In order to measure accurately visual defects, ophthalmologists are not only privileged to use all the methods of the nonmedical refractionists but also many other very valuable procedures which, because of their medical nature, the other group is not allowed to employ. This gives ophthalmologists a decided advantage. The basic difference between the methods employed by the two groups lies principally in the manner in which each attempt to control the action of the ciliary muscle, which is the muscle of accommodation within the eye, during the period of the examination. There are other differences, however, which will appear later.

There is a principle recognized by all refractionists, both medical and otherwise, that relaxation of this muscle is necessary before it is possible to measure accurately the refractive error. To secure this relaxation the nonmedical refractionists are not permitted to put any medicine in the eyes of their patients for the purpose, much to their sorrow, and are forced to depend entirely upon the mechanical measure known as the "fogging method" in all cases.

It is only fair to say that the "fogging method" is the best known substitute for the use of "drops" and is quite satisfactory for most older patients, but is not to be depended upon when the patient happens to be a child or a young adult. I shall not enter into any detailed description of the ciliary muscle except to say that it is circular in shape and surrounds the crystalline lens within the eye. Through its ability to contract and relax, the shape of the lens is thus changed, with the result that its refractive power is increased or diminished as necessity demands, in order that rays of light entering the eye from any and all distances may be properly focused upon the retina. The difference between extreme contraction and extreme relaxation of this muscle, together with the resultant changes in the refracting power of the crystalline lens, is known as the power or amplitude of accommodation.

At this point it may be permissible to call attention to a table which shows the average amount

of accommodation there is in all normal eyes at each five-year period between the ages of ten and sixty years (Table 1). The amplitudes are expressed in diopters, which is the unit of measure of lenses.

TABLE 1.—*Accommodation in the Eyes at Different Ages*¹

Age	Amplitude	Age	Amplitude
10.....	14.0 D.	40.....	4.5 D.
15.....	12.0 D.	45.....	3.5 D.
20.....	10.0 D.	50.....	2.5 D.
25.....	8.5 D.	55.....	1.75 D.
30.....	7.0 D.	60.....	1.00 D.
35.....	5.5 D.		

From a careful study of these figures it is apparent that the eye possesses a very large amount of accommodative ability during the earlier years of life. It is also apparent that the eye loses this ability to accommodate at the rate of approximately a quarter of a diopter each year from youth to old age, when there is very little, if any, accommodation left.

HOW AGE FACTOR INFLUENCES REFRACTION METHODS

These varying amounts of accommodation at different ages are due to the fact that the crystalline lens has a tendency to become harder and harder as we grow older, thus interfering with the sphincteric action of the ciliary muscle in its attempt to change the shape of the lens and consequently its index of refraction. On account of this phenomenon of accommodation in all eyes, ophthalmologists very properly divide refraction cases into two more or less distinct groups, depending principally on the age of the patient. They also modify their technique of examination accordingly to suit the needs of those in each group.

Group 1 consists usually of those patients who have passed the age of forty-five or fifty years in which the power of accommodation has become quite reduced, as shown by the table presented. Due to the fact that there is such a small amount of accommodation left in the eyes of the patients of this group, ophthalmologists are usually able to fit them satisfactorily with glasses without the aid of a cycloplegic. By cycloplegics is meant those drugs such as atropin, homatropin, scopolamin, and hyoscin, which, when dropped into the eyes in proper solution, will not only dilate the pupils, but will also temporarily suspend all action of the ciliary muscle for the purpose of accurately measuring refractive errors.

In Group 2 there is presented an entirely different picture from the one in Group 1. These patients are usually under forty-five years of age and possess large amounts of accommodation, ranging from 14 diopters at age 10, to 3.50 diopters at age 45 (see table). Because of this extra amount of accommodation in the eyes of all patients in this younger group, which must be overcome before accurate measurement of their refractive

errors becomes possible, ophthalmologists find it advisable to modify their technique from that which they find to be adequate for the older patients. In order temporarily to suspend all muscular activity within the eyes of these younger patients, for purposes of refraction, ophthalmologists have always used cycloplegics, provided the patient does not have glaucoma. In that event their use is contraindicated. They employ these drugs when measuring the eyes of this younger group of patients for glasses, for the good and sufficient reason that there is no other method yet devised that is so reliable in all cases. By their use there is also the added advantage of being thereby enabled to employ the valuable objective test known as static retinoscopy in addition to the subjective examination in which the patient reads the letters on a chart at twenty feet distant. Static retinoscopy is also known as skioscopy, skiametry and the shadow test, and is distinctly a medical procedure in that it is of value only after the powers of accommodation have been temporarily suspended by the use of "drops" in the eyes.

RETINOSCOPY

In this connection it should be mentioned that about the year 1890 Andrew J. Cross of New York City evolved a theory known as dynamic skiametry,² which has as its purpose an objective means of measuring the refraction of the eye by the shadow test with the ciliary muscle in contraction, *i.e.*, with some of the accommodation in force. At best this is only a poor substitute for the shadow test as used by ophthalmologists, and has never been generally accepted and adopted by the nonmedical refractionists for whom it was originated. On the other hand, static retinoscopy is a method that has been universally accepted and used by ophthalmologists for many years. Its value is twofold:

First, it furnishes a most excellent and accurate objective method of refraction. This is especially useful in the case of young children and illiterates who are unable to make intelligent responses to the subjective test.

Second, it supplies a reliable objective test with which to check the subjective findings in all cases, regardless of the age or intelligence of the patient.

OPHTHALMOSCOPY

Another fundamental reason why refraction is a medical rather than a nonmedical problem is that no examination of a patient's eyes is complete until a thorough ophthalmoscopic examination has been made. This is due to the fact, as already stated, that many times the eye symptoms of which patients complain are the result of some local or constitutional disease.

In order then thoroughly to inspect the interior of the patient's eyes with an ophthalmoscope, especially in the presence of pathology, it many times becomes necessary first to dilate their pupils with a mydriatic. This is a medical procedure, and not within the province of nonmedical refractionists.

Furthermore, if the ophthalmoscopic findings are to be accurately interpreted and appropriate treatment prescribed, a general medical education, together with a special training in ophthalmology, becomes a necessity.

Much more might be said on this subject, but sufficient has already been presented to prove that refraction is necessarily a medical problem if the best interest of the patient is to be conserved.

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DISCUSSION

DEWEY R. POWELL, M. D. (Medico-Dental Building, Stockton).—I feel that there can be no argument as to the accuracy of Doctor Kelsey's conclusion that refraction is logically and definitely a medical problem. Certainly no one will dispute the advantage of a mydriatic in retinoscopy of patients under 40, and the value of a dilated pupil in detailed fundus examinations. It is also common knowledge that many symptoms referable to the eyes are but part of the picture of a condition either ocular or systemic that requires a medical training to recognize and appreciate. We could all cite case histories similar to that given by the lady who consulted me last week very much disturbed because her new \$20 glasses prescribed by a leading optician three weeks before had not stopped the watering of the right eye. The lenses, which, by the way, were plus 0.25 cylinder, had not helped an obstructed lachrymal duct, but the optician had collected the \$20 and the patient had nothing left with which to pay the oculist.

The important problem for us to consider is why do so many laymen think the optician competent to handle their refraction problems instead of immediately associating the oculist with their glass needs. The foremost reason has been mentioned by Doctor Kelsey—the power of advertising. A few days ago the district manager of a large manufacturing and wholesale optical house was in my office and showed me plans and illustrations and text of an advertising campaign for the next few months to cost over \$500,000 and using current periodicals with a total circulation of 15,000,000. Many millions of readers will have every opportunity to learn the advantages of fulvus frames and lenses. Local optical houses with newspaper and radio advertising will capitalize on this national campaign by informing the public early and often that they are the ones to solve their spectacle needs in their respective localities in the most accurate and up-to-date fashion.

Another reason is the fear of added expense and the wish to get desired results by securing examination and merchandise from one person or firm. I believe that the oculists are partly responsible for this fear from two standpoints. First, complacent in their attitude of smug superiority the fees of a considerable number of oculists have been too large, and secondly, too often a prescription has been given without consideration or discussion of the style of frames, and as a result the optician's bill has been often unnecessarily great. In combining the two costs, the pocket-book has been hurt, and the resultant wail heard by relatives and friends prompts them to seek less expensive and more direct service.

Should we control the style and price of glasses given those patients who do consult us by dispensing their glasses directly from the wholesaler to the patient in our own office? I appreciate that this is a debatable point, but in conclusion I shall state my personal opinion. After insisting for eighteen years that the oculist should have no part in the merchan-

dising of lenses and watching during those years any number of patients return to the optician for a check-up or re-examination instead of coming back to me, and after noting how many patients paid for lenses and forgot to pay for their examination, we have in our office the past year supplied our patients directly from the wholesaler excepting in those instances where they specifically requested a prescription. The result to date has been more satisfactory to both patients and ourselves.

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M. N. BEIGELMAN, M. D. (1930 Wilshire Boulevard, Los Angeles).—I fully agree with Doctor Kelsey that in some groups of cases the use of mydriatics is most essential for an accurate estimation of the refractive error. It is also true that in progressive myopia we are dealing not only with a refractive error but with distinct pathologic changes in the anatomic structures of the eyeball as well. Perhaps it would be unnecessary to consider this side of the question if we realize that the very decision as to whether a case is "refractive" or "pathologic" constitutes in itself a medical problem and must be in the hands of an eye physician.

When the patient comes to the conclusion that he needs glasses or that he must change the old ones, he does it because of some discomfort or some visual impairment. It goes without saying that the patient may be wrong and that his subjective symptoms are due to some organic lesion—from a conjunctival congestion to a brain tumor. Is the "refractionist" competent to make this diagnosis, particularly in the incipient stages? Let us admit that even to the eye physician with all his medical training and his daily attention to pathologic conditions, the matter of early diagnosis is not always a simple or easy task. How this feat can be expected from a "refractionist" is beyond one's comprehension.

One more point, not of a purely utilitarian nature. It is only in the last ten to fifteen years that the problem of refraction as a whole has come out of the limits of physical and physiologic optics. Through the efforts of Steiger and a host of his followers (Tron, Sheerer, Kraupa, Kronfeld) the broader biologic concepts of refraction have come into existence. The principles of variation, selection, and heredity have been applied for the first time to the study of refraction with most gratifying results. It would be a pity to turn over the domain of refraction to men whose educational background is inadequate for any other conception of our refractive problem than that of "fitting glasses."

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JOSEPH L. McCOOT, M. D. (1319 Four-Fifty Sutter, San Francisco).—It was Mark Twain, I believe, who once made the statement that we humans like to do our own thinking concerning the welfare of our bodies and the future of our souls. With respect to the latter, we at once enter the realm of pure speculation and from the number of creeds and religions, one has a wide variety from which to choose. Our aches and pains, however, are with us always, and it is not at all surprising that we seek relief where it may be found.

We must not forget that, in spite of the enormous advances which medicine and surgery have made in recent years, it was not so long ago, as time is measured in the life span of the human race, that there was much of imperiousness and superstition in the healing art. Great as has been our progress toward scientific truth in medicine, we sometimes lose sight of the fact that there is a great difference between our viewpoint and that of those whom we seek to cure.

We try to approach the recognition and cure of disease in an orderly, logical and scientific manner, while the patient, with but few exceptions, is interested only in getting relief and not at all in how it is done, so long as it is done quickly and effectively.

It is not surprising, therefore, that we have the ever-present cults, pathies, and isms with which to contend. The ranks of these irregular offshoots from

scientific medicine are filled with incompetent, poorly educated, misguided, if not dishonest, individuals who seek to capitalize and prey upon the physical and mental ills of the public.

Deplorable as the situation is, from the standpoint of the public welfare, the medical profession is to a certain degree responsible for the birth and continued existence of many of these cults because we fail to recognize that the practice of medicine is more of an art than a science.

Patients consult us for relief and they expect us to use every therapeutic measure at our command to that end. Too often they are of interest to us only until the diagnosis is established and then dismissed with a prescription, a few words of not very specific advice, and the next patient is ushered into our consulting room.

Ophthalmologists are not the least of the offenders in this respect, but theirs is rather one of omission than of commission and it is because of this that papers like Doctor Kelsey's are presented to our societies.

It seems to be a rather sad commentary upon modern medicine for anyone to be obliged to ask the question, "Is refraction a medical or nonmedical problem?" Would it not be just as absurd to ask the same question about roentgenology because there are lay x-ray laboratories, or about obstetrics because a large proportion of pregnant women are delivered by midwives, or about orthopedics because part of their work is of a mechanical nature? These examples will suffice.

The ophthalmologist uses physics, geometry, trigonometry, and physiological optics in estimating the refraction and motility of the eyes. By any stretch of the imagination could one consider, therefore, that he was dealing with an inanimate structure rather than with a vital organ intimately connected with the brain and nervous system?

It always has been, and shall continue to be, my firm conviction that refraction and the anomalies of the ocular muscles are as much a part of ophthalmology as the surgery and diseases of the eye. Certainly one would not consider these as nonmedical subjects.

There are ophthalmologists throughout this country and abroad who feel that refraction is purely a technical problem and delegate it to a lay assistant. I respect their viewpoint, but cannot understand it or subscribe to it.

There are others who by preference, or because of a large surgical and consulting practice, do very little refraction themselves. This is delegated to a young ophthalmologist in their office or sent to other young colleagues.

Finally, by far the largest group is composed of ophthalmologists who are compelled economically to develop as large a refraction practice as they can.

In order that we may have a clear understanding of the problem under discussion, we should approach it from three angles: our own faults, the attitude of our professional colleagues toward ophthalmology, and public education.

If I were to be asked the most outstanding fault of which ophthalmologists were guilty, I should unhesitatingly say lack of appreciation of the importance of refraction and motor anomalies. There are several reasons for this: insufficient early training in these fundamental branches of ophthalmology which usually engenders a distaste for the work, with the result that it is either poorly done or turned over to an assistant. There are others whose interest lies in pathology and research work and whose time is so taken up with this type of work that they have little opportunity for what to them is the monotonous branch of ophthalmology. The same reason applies to those who, from choice or necessity, practice the combined specialties. Here lack of time rather than lack of interest is responsible for much superficial refraction.

The remedy lies with us. After having obtained their degrees in medicine and serving their internship,

those who wish to specialize in ophthalmology should be impressed with the necessity for obtaining sufficient instruction in physics and physiologic optics so that they shall be able intelligently to master refraction and motor anomalies. Too much time devoted to physics and physiologic optics has a tendency, however, to overemphasize the physical rather than the physiologic aspect of the subject; on the other hand, too little makes it exceedingly difficult to grasp. Unless the student approaches the subject in this way he soon becomes engrossed in the study of the diseases and surgery of the eye—fascinating branches of our work. I admit, but hardly remunerative enough to enable him to meet his obligations in his early years of practice unless he has a private income.

With regard to the attitude of the profession toward ophthalmologists, let me say that I believe our relationship could be very greatly improved by frank discussions. I have been impressed with the fact that the principal criticisms our colleagues have to make are against our refraction, and an expense to the patient greater than he can afford.

Ophthalmologists everywhere recognize that to a certain extent this first criticism is justified. However, through their own efforts and with the help of the American Board of Ophthalmic Examinations the standard of practice in ophthalmology has been very materially raised and it will not be long before this criticism will cease to be founded on fact. With regard to the criticism concerning the total expense for the examination and glasses, I have no hesitancy in making the statement that within certain limits this is not in accordance with the facts.

In every community there are an adequate number of young ophthalmologists well trained in refraction and motor anomalies who would be only too glad to charge a fee for their examination commensurate with the financial limitation of the patient, having in mind the probable total outlay which the patient will be called upon to make. Under these circumstances the patient's total bill will be no higher than were he to have had the examination made by a nonmedical refractologist.

But what is more to the point he would have had his eyes examined by a physician thoroughly trained in physiology, anatomy, pathology, neurology, and internal medicine in addition to a thorough training in the correction of errors in refraction and motor imbalance.

The public should be educated to the difference between the physician who specializes in ophthalmology and the nonmedical refractologist.

The medical profession must assume and discharge this responsibility to the best of its ability.

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DOCTOR KELSEY (Closing).—Those of us who have been initiated into the intricacies of ophthalmology, and have become acquainted with the intimate relationship existing between the eye and the rest of the body, need no further proof to convince us that refraction is a medical problem. On the other hand, it is not hard to understand how those who have not had the advantage of first-hand information on the subject, might hold refraction to be of only mechanical importance. Especially is this true since there has been so much misinformation and so little real information concerning refraction available to the average person. For many years the public has been the recipient of a large amount of commercialized discussion of the subject, while the professional aspect has been characterized, in most part, by a dignified silence.

In view of these facts, if any layman should arrive at an erroneous conclusion relative to refraction, he scarcely can be blamed. It would appear, then, to be the duty of ophthalmologists to use every legitimate means at their command in an attempt to acquaint the public with the difference between a medical and a nonmedical examination and refraction.

CALCIUM THERAPY IN UROLOGY*

By HENRY A. R. KREUTZMANN, M. D.
San Francisco

DISCUSSION by Franklin Farman, M. D., Los Angeles; Miley B. Wesson, M. D., San Francisco; Albert M. Meads, M. D., Oakland.

THE importance of calcium as an essential constituent of the body and its value as a therapeutic agent has been recognized for only a comparatively short time. Particularly is this true in the field of urology, where its administration is of benefit in a number of unrelated pathologic conditions. Because there has been so much divergence in the results of experimental work on calcium and such discrepancy in the results obtained clinically, it is possible that few physicians have recognized the value of this drug in the field of medicine. Even at the present time, investigators are not in accord as to the amount of calcium normally present in the blood. The limits range from 8.8 milligrams per 100 cubic centimeters as determined by Jones, to 12.46 milligrams according to Lyman. The normal appears to be between nine and eleven milligrams per 100 cubic centimeters of blood.

METHODS OF ADMINISTRATION

Calcium may be given either orally, intravenously, or intramuscularly.

Oral Administration.—Most of the salts have a disagreeable taste and when given orally in sufficient amounts to be of benefit are irritating to the gastro-intestinal tract. For these reasons calcium lactate is most often used, although it possesses a lower calcium content. Recently calcium gluconate has been developed by Sandos. It is tasteless, comparatively nonirritating, and has been shown by Rothlin to be physiologically and pharmacologically equal to calcium chlorid. Cantarow believes it to be the most satisfactory product for routine use. The dose of calcium gluconate is sixty grains three or four times a day. The best time for administration is half an hour before meals or four hours after meals, when the alkalinity of the upper intestinal tract is lowest. With this dosage the serum calcium rises two to four milligrams above normal in one to two hours. It will remain above normal for six to eight hours.

Intravenous Administration.—For this purpose the chlorid or gluconate salts are most commonly used. The latter has the advantage of causing no irritation if accidentally injected into the tissues about the vein. The dose is 10 cubic centimeters of a 10 per cent solution of the chlorid and 10 to 20 cubic centimeters of a 10 per cent solution of the gluconate. The injection should be made slowly, as the patient will experience a severe burning sensation over the skin of the entire body, with some dyspnea. An increase of 80 to 100 per cent in the serum calcium concentration occurs within five minutes. The preinjection level is usu-

* Read before the Urology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

ally regained within two hours. Because of the rapidity of elimination the intravenous injection may be given several times a day without any harmful effects.

Intramuscular Administration.—Calcium gluconate is the only salt which will not produce any inflammatory reaction when given intramuscularly. The dose is 10 cubic centimeters of a 10 per cent solution. Observation shows a rise in the serum calcium within twenty minutes, gradually declining and reaching normal within six to eight hours.

THERAPEUTIC INDICATIONS

The various urological conditions in which we have used calcium with benefit are: acute epididymitis, acute salpingitis, incrusted cystitis, hemorrhage, and ureteral calculi.

ACUTE EPIDIDYMITIS

Gonorrhreal infection of the epididymis was benefited by the use of calcium salts when the patients were seen at the onset of involvement. The earlier the treatment is begun the greater is the chance of aborting this condition. Our method has been to give an intravenous injection as soon as the diagnosis is made, followed in two hours by an intramuscular injection. The intramuscular injections are repeated every eight hours. If there is no improvement in two days this type of medication is stopped. Of course it is understood that, along with the calcium, other measures which have a definite value, such as support and heat, are also used. In a series of eighteen cases there was definite relief in seven. By relief is meant a decrease in the size of the testicle with freedom from pain. We feel that calcium therapy was of benefit, because the epididymis in each of these instances did not reach an extreme stage of swelling and subsided more rapidly than is usually the case.

ACUTE SALPINGITIS

Having obtained some success in the treatment of acute gonorrhreal epididymitis, it was thought that the same may hold true for acute gonorrhreal salpingitis. In this condition the diagnosis was never made as soon as in epididymitis. Most women do not remark about a vague lower abdominal pain. It is not until severe inflammation with pus formation has occurred that the diagnosis is made. For that reason in a series of twelve cases only two obtained any relief from pain. In these two patients, although the course of infection was greatly moderated, bimanual palpation showed the tubes to be thickened and tender to palpation.

In what way calcium acts in these acute infections is not definitely known. It may be due to marked leukocytosis, as Hamberger observed that calcium increases the ameboid movement of the phagocytes.

INCRUSTED CYSTITIS

Although calcium salts are not used directly, it appears that calcium metabolism in some way affects this condition. By using parathyroid ex-

tract the calcium content of the blood is increased. For some reason as yet unknown, this has a beneficial action in patients with incrusted cystitis. Redewell reports improvement also in leukoplakia and malakoplakia.

REPORT OF CASE

At present we have one patient in whom repair of a vesicovaginal fistula had been attempted four times, each time unsuccessfully. At last, closure had been effected years ago by closing the outlet of the vagina and incorporating this structure with the bladder. When seen in June, 1930, she complained of frequency, nocturia, and dysuria. The urine had the typical foul odor of an alkaline cystitis. Cystoscopy showed the whole surface of the artificial bladder, which did not contain normal mucous membrane, to be covered with grayish deposits of urinary salts. After two months of unsuccessful local treatments the incrustations were removed with a curette. Lactic acid was instilled into the bladder at intervals for two months. For the past fifteen months the only medication the patient has received has been occasional doses of parathyroid extract. At the present time she is free of all symptoms, the urine is normal, and there has been no redeposit of urinary salts. Just how much benefit has been derived from the parathyroid medication it is difficult to say. It must have some value, as a raw surface such as is present in this patient is certainly a fertile field for the deposit of urinary salts.

HEMORRHAGE

Since Wright first advocated calcium salts they have been used extensively for many different types of hemorrhage. Different authors claim varying results for the same condition. At present, however, it appears doubtful that any marked decrease in coagulation time can be obtained when calcium salts are given by mouth. To be of value they must be given either intravenously or intramuscularly. It has been shown that a single injection may result in a decrease in clotting time and a lessening in the tendency to bleed; whereas the prolonged maintenance of an elevated blood-calcium level will cause a secondary increase in coagulation time with greater bleeding. Calcium is of most value in the slow, oozing types of hemorrhage. Its use has been advocated in malignancy of the bladder and in hemorrhage following prostatectomy.

As a precautionary measure our prostatectomy patients receive an intramuscular injection of calcium gluconate one hour before going to surgery. This is repeated in eight hours if the bleeding appears excessive.

In cases of carcinoma of the bladder we have had no result, but have had to rely on other drugs to control the bleeding.

URETERAL CALCULI

Aub was one of the first to recognize the benefit of calcium chlorid to relieve colic of ureteral or renal origin. More recently Bauer, Salter, and Aub reemphasized this fact. During the past eight months we have given calcium chlorid intravenously to thirty-two patients suffering from ureteral calculi. Some of them were treated during an attack of colic, whereas in others the stone was quiescent. Relief from pain was obtained in all but six cases. In nine of the remaining twenty-

six cases the stone was passed without further cystoscopic manipulations. It is remarkable how quickly the pain will disappear after the injection. In some instances it was necessary to repeat the injections in several hours and again there was relief from pain. One patient who obtained no relief from large doses of morphin was freed from pain by the administration of calcium chlorid.

The most striking case in the series was that of a man of fifty-seven who had a left nephrectomy fifteen years previous for pyonephrosis with calculi. Three weeks before examination he had an attack of ureteral colic on the right side. X-rays showed two stones in the right ureter. On two different occasions it was impossible to pass a catheter or the smallest filiform beyond the stones, which were impacted 20 centimeters from the bladder. He was given one injection of calcium chlorid. The next afternoon he had a mild attack of colic which lasted two hours. Following the attack he recovered one stone. On taking an x-ray it was seen that the other stone had also been passed. It was then possible to insert a No. 6 whistle-tip catheter into the kidney pelvis without difficulty.

Just what the action of calcium is in these cases has not been demonstrated. Calcium is known to decrease the irritability of unstriated muscle. Perhaps it is this action which causes a relaxation of the spasm produced by the calculus and permits the stone to pass on. With this thought in mind we gave calcium intravenously to a number of patients who had severe pain following complete kidney investigation. This was done in the hope of decreasing the colic. In not one instance, however, was there any relief or diminution in the pain. This shows that the colic of a ureteral stone is not similar to that produced by ureteral catheterization.

CONCLUSIONS

Calcium is of benefit in cases of acute epididymitis, acute salpingitis, incrusted cystitis, prostatic hemorrhage, and ureteral calculi.

Calcium gluconate is the most satisfactory salt for routine use. This drug is best administered either intramuscularly or intravenously. When given intravenously it may be repeated in several hours without any ill effect.

2000 Van Ness Avenue.

DISCUSSION

FRANKLIN FARMAN, M. D. (727 West Seventh Street, Los Angeles).—Calcium therapy is a very interesting subject and the amount of literature on the topic indicates the wide appeal it has made to physicians in treating disease. We are fortunate in having the record of Doctor Kreutzmann's experience presented here today as very few of us are making sufficient use of this valuable mineral agent.

The calcium salts, mainly the chlorids, gluconates and lactates, are well adapted to the relief of inflammatory conditions, especially in the acute stage, and it is a well established fact that they act, by stimulating phagocytosis, by decreasing exudative processes (outpouring of serum and reducing cell permeability), and by moderating nerve and muscle tissue irritability, thereby relieving pain and spasm. (This is the desired effect of the intravenous injection of calcium in cases of ureteral colic.)

Calcium is valuable in checking hemorrhage, especially of the capillary, oozing type which is frequent in inflamed parts, such as in inflammation associated with hypertrophy of the prostate. The presence of calcium is necessary for the proper reaction between thrombokinase and thrombogen.

In my own practice I have made use of the calcium salts (lactate, gluconate, carbonate, chlorid) usually in combination with sodium bicarbonate and magnesium salts as preliminary medication for prostatectomy and as accessory treatment in some cases of acute pyelitis and pyelonephritis. The use of the calcium salts alone, or in combination, given per mouth in sufficient dosage will increase the urinary output and aid in restoring the normal blood chemistry levels. The claim that the calcium salts are not well absorbed from the intestinal tract has been amply disproved by Baráth and the Pavlov school.

In conclusion, it may be said that calcium is present in all the tissues of the body and is a necessary physiological salt. The metabolism of calcium is in some manner intimately related to and dependent upon the secretion of the parathyroid gland and vitamin D. To a lesser degree it is allied with the activity of the anterior lobe of the pituitary gland.

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MLEY B. WESSON, M. D. (490 Post Street, San Francisco).—Doctor Kreutzmann's paper should be of particular interest to us, as the first man in the United States to use calcium therapy in urology was a member of this section.

Calcium chlorid intravenously has long been used in the treatment of paralysis agitans, tetany, epilepsy, chorea, chronic ulcerative toxemias, and slow coagulative hemorrhages. In studying the function of the calcium ion in the human body, scientists concluded that it (1) materially increased phagocytosis, (2) reduced inflammation of the tissues, and (3) increased tissue resistance against bacteria invasion.

E. Radnai of Budapest in 1922 reported that its use in two cases of epididymitis resulted in cessation of pain within a few hours and the disappearance of swelling within a few days. Dr. Alvin E. Cerf of San Francisco tried it on a series of seventeen ambulatory cases of gonorrhreal epididymitis and in 1924 reported his results in the *Therapeutic Gazette*. The article apparently escaped general notice, for Campbell in 1927, in a review of three thousand cases treated at Bellevue Hospital, did not mention the use of calcium chlorid, nor did Wolbarst in 1927, nor Pelouze in 1928, in their books on gonococcus urethritis in the male. Livermore in 1929 in his book on gonorrhea reports that the use of calcium chlorid in his hand was disappointing. However, he used ten cubic centimeters of a one per cent solution, whereas Cerf advised ten cubic centimeters of a ten per cent solution.

Calcium chlorid is objectionable because of its extremely irritant effect. Immediately after the beginning of the injection there is a severe burning at the base of the tongue and then a wave of heat passes over the entire body, and this often persists for ten or fifteen minutes. Occasionally there is nausea, and again, rather severe shock and cyanosis. I had one patient who went into temporary coma, with a marked dilatation of the pupils and cessation of respiration for about a minute.

Several years ago calcium gluconate was offered to the profession. It is much better tolerated, is less toxic, and the only disagreeable effect is a temporary burning at the base of the tongue. Recently calcium glucose has appeared and is reputed to be more efficacious and less toxic than is calcium gluconate.

Calcium gluconate can be given by mouth, intravenously, and intramuscularly. It is tasteless, and for conditions where a mild and constant calcium effect is desired it may be given by mouth in doses of sixty grains three or four times a day—preferably after meals as there is then greater absorption and a more persistent effect. Excessively large doses diminish the

amount of absorption by producing a diarrhea. Following oral administration, the blood serum calcium reaches a maximum in about an hour and remains high for about eight hours. The findings after intramuscular injections are practically the same, the maximum being reached in about one-half hour, and the rise persists for the same length of time as after oral administration. Hence, since the oral administration is just as effective as the intramuscular and avoids traumatism of tissues there is no justification for intramuscular injections. The fast method is the intravenous; the blood serum calcium reaches a maximum at once and falls to normal in two hours. The drug goes into the tissues and is there available as a protective factor.

The literature is beginning to be filled with enthusiastic reports of the effect of the use of calcium salts. Personally, for the past seven years I have used calcium chlorid or calcium gluconate empirically as a prophylactic in all cases of vasitis and epididymitis, and occasionally following urethral instrumentation.

I at least did the patients no harm. I may have aborted or cut short some of my cases. I do not know as I also used the other recognized forms of therapy. I have repeatedly given daily injections for two or three weeks for a tender globus minor. The epididymitis in most cases did not progress, neither did it suddenly subside and become painless as others report. Doctor Kreutzmann's results in the cases of renal colic are most interesting and instructive.

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ALBERT M. MEADS, M. D., (251 Moss Avenue, Oakland).—In a specialty where we tend to think in terms of surgery and active instrumental treatment, Doctor Kreutzmann's paper on calcium therapy is particularly welcome as it calls our attention once more to the possibilities of another means of treating certain symptoms that demand relief. I am one, at least, who has neglected the possibilities of calcium therapy as outlined in this instructive paper, as I have limited myself largely to the older methods of treatment, leaving calcium primarily for the treatment of hemorrhage or potential bleeders.

We have used calcium gluconate intravenously, but not frequently enough to draw any conclusions. The disagreeable sensation following immediately after its injection passes off within a few minutes, so that it seems to us the best drug for all around use, especially in the office. Although there is a question in the minds of some as to the efficacy of calcium in some of the diseases mentioned, this paper will have done much if it will make us keep calcium therapy in mind and give it a fair trial before condemning it.

CHRONIC PURULENT OTITIS MEDIA*

ITS TREATMENT WITH IODIN POWDER
(SULZBERGER)

By RUSSELL FLETCHER, M. D.
San Francisco

DISCUSSION by J. D. Lewis, M. D., Santa Barbara; Frank A. Burton, M. D., San Diego; Robert C. Martin, M. D., San Francisco.

IN the June 1930 *Laryngoscope* Dr. M. D. Lederman of New York¹ wrote about his very satisfactory results in the treatment of chronic purulent otitis media with iodin powder. We have been using this form of treatment ever since and have had excellent results. In fact we are convinced, after using it in more than seventy-five patients, that it is the best aid in the treatment of

these conditions at the present time. As there has been very little written on this subject other than articles by Doctor Lederman, and as it does not seem to be well known among many otologists, we felt that it was advisable to give this report.

Doctor Lederman's first article appeared in the November 1917 *Laryngoscope*.² In 1930 he said: "Since employing it I have not been obliged to resort to radical surgery in any case lacking indicative symptoms, no matter how chronic. Indications for such intervention must be distinct and urgent before resorting to such a drastic measure, with its attendant possibility of great loss in auditory function." Our experience has been very similar to Doctor Lederman's.

IODIN POWDER (SULZBERGER)

The following is a brief description of the iodin powder (Sulzberger). "It is an intimate association of iodin with boric acid, prepared by mixing iodin solution with dry, finely powdered boric acid and evaporating the solvent so that free iodin is deposited on the powder and not in chemical combination. The action is due to the iodin, which, as the boric acid dissolves in the secretions, is liberated and penetrates deeply into the tissues. Due to the solubility of the boric acid in the secretions, it is completely dissolved in forty-eight hours and does not cake, which is a very valuable quality."

There have been several imitations or substitutes put on the market. We have not tried any of these because the original powder is very inexpensive.

TECHNIQUE OF TREATMENT

The technique of this treatment is extremely important. It could be described in one sentence: Thoroughly clean and dry the middle ear, and insufflate iodin powder. However, as the keynote to the success of the treatment is the very thorough cleaning of the entire middle ear cavity and its recesses, the above statement needs amplification. The longer we have used this treatment the more firmly we are convinced that its success is due, in a large part, to the very thorough cleaning of the middle ear cavity before insufflating the iodin powder. We believe the reason that a few otologists have not obtained good results has been because they did not realize the importance of thorough cleaning. We know that the very painstaking and thorough elimination of pus, débris, and mucus as demonstrated by Doctor Lederman would have cleared up certain failures previously treated, without the added use of the iodin powder.

"Irrigations are forbidden," according to Doctor Lederman, but we have used them occasionally to mechanically clean out the attic cavities or other inaccessible recesses. These irrigations were always followed by thorough drying. Granulation tissue and polypi are removed. All gross débris and pus is removed as completely as possible. This is most easily and efficiently accomplished with fine glass or metal suction tips. An excellent metal suction tip is easily made from the old hypodermic needle three inches long and fifteen to eighteen gauge. This is about the same size needle that is

* Read before the Eye, Ear, Nose and Throat Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

used to puncture the nasal antrum for irrigation. The sharp point is removed and the end is smoothed off with a file or stone. The end may be curved or bent at an angle so that you can reach all recesses of the cavity. Suction, which completely closes the external canal, is contraindicated.

After cleaning with the fine suction tips, the middle ear cavity is then thoroughly wiped out with fine wire, cotton-tipped applicators dipped in 50 to 95 per cent alcohol. It is best to start with about the 50 per cent alcohol and gradually increase the strength because of the burning which sometimes occurs. The cavity is then wiped out thoroughly with fine, dry cotton applicators. Very fine metal or wire applicators, which can be bent at the end, are the best to reach into all the recesses of the cavity.

It takes time, patience and care to clean a middle ear cavity thoroughly. The various recesses, which differ in every case, must be searched for and thoroughly cleaned. It is surprising to find how much space is concealed around behind the edges of a completely destroyed drum—below in the hypotympanum, anteriorly in the eustachian tube area, in the attic cavities, and in the cul-de-sac between adhesions which are often found.

After this thorough cleaning and drying of the ear, the iodin powder is blown into the middle ear. There are several insufflators on the market, any of which is satisfactory. We lost our patented insufflator about a year ago and since then have used the small "Asepto" glass syringe or pipette, No. 2031, which we find just as satisfactory. The pipette is filled by aspirating the powder into it. A sufficient amount of powder to fill the middle ear is blown in.

The number and frequency of treatments varies with each case, and depends upon the amount and type of discharge found at each visit. At first it may be advisable to have them report on several successive days, but very soon the time between treatments may be lengthened. Home treatments are neither necessary nor allowed.

CAUTIONS IN USE OF POWDER

There are one or two things to be watched for. Some patients are a little sensitive to the iodin powder and get a dermatitis of the canal from it. A little bland ointment applied to the canal after cleaning will usually prevent this. The weak powder rarely causes any dermatitis even in children. It is usually better to start with the weak powder at the first treatment, as sometimes the strong powder causes pain when blown into the ear. Yet we have used the strong powder from the beginning without any reaction. It may be necessary to use sterile five to ten per cent cocaine solution before the insufflation of the powder, or in order to clean out the middle ear with applicators dipped in alcohol.

It is very important to keep the powder in small dark bottles with ground glass stoppers, as the iodin is freely given off when exposed to the air. There is a strong smell of iodin when the cork is taken from the bottle. The powder blower or

atomizer is, therefore, not suitable to keep the powder in, as it is freely exposed to the air and in a few days loses its color and odor of iodin. Fresh powder should be taken each time from the bottle and insufflated. Some time ago I talked with a colleague who was using it in one of the clinics. His clinic had not obtained very good results from it, but he said they had kept it in a powder blower, which I believe was one of the reasons for not getting better results.

RESULTS IN PATIENTS TREATED

We have used this treatment on seventy-six private cases of chronic discharging ears. There were fifty-four patients with chronic purulent otitis media who had not had a radical mastoid operation, and twenty-two patients who had had a radical mastoid in the past but whose ears had not healed up or had discharged intermittently since operation. The ages ranged from three to fifty-eight years, and the ears had been discharging from two to forty years. Of these patients twenty-four had foul pus, seventeen had granulation or polypoidal tissue, and three had definite cholesteatoma. Twelve had previously been advised to have a mastoid operation. The average length of time to dry these cases was a little over three weeks, and the average number of treatments was only six. The ears in all of the fifty-four patients have been definitely dried, except the following ten patients. Two cases discontinued treatment after seven treatments or less; three patients, all improved, are under treatment; on two patients a radical mastoid operation had to be performed. Three patients have not responded to intensive iodin powder treatment or any other treatment that was tried.

There is another large group of chronic discharging ears that sometimes is difficult to treat and dry up. This group includes patients who have had a radical mastoid some time in the past and a discharging ear practically ever since, or an ear subject to frequent exacerbations. We have had twenty-two cases of this kind. The average number of treatments before they were dry was four. Only two of these required more than six treatments.

It is our impression that iodin powder is more effective in drying up these old radical mastoid cavities than the other medicines we have used.

CONCLUSIONS

After using iodin powder for almost two years we believe that it is the best treatment for chronic running ears at the present time. It is not a cure-all. The term "cure" for a chronic running ear expresses too much, as such an ear may be subject to frequent exacerbations. The term "dry" is much better and means that probably the dangerous infectious process in the ear is arrested at least while it is dry. Cases with large cavities must be watched frequently as a dangerous process may be going on without visible discharge and indications may arise at any time for doing a radical mastoid operation. However, there are very few cases of chronic purulent otitis media, provided

there are no signs or symptoms of intracranial or labyrinthine complications, which cannot be dried up with careful treatment with iodin powder, without operation. Several patients with cholesteatoma or other signs of complications, whom we strongly advised to have a radical mastoidectomy, refused operation and we were frequently surprised to obtain a dry, quiet ear by continuing the iodin powder treatment. It is far more satisfactory to the patient to have a dry ear without operation than to have the ordeal of the operation and its probable accompanying loss of auditory function, together with the possibility of not having a permanently dry ear after the best operation obtainable.

490 Post Street.

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DISCUSSION

J. D. LEWIS, M. D. (1534 State Street, Santa Barbara)—Despite the several articles which have appeared in our special literature recording the excellent results obtained by the use of the iodin powder (Sulzberger) in the treatment of chronic purulent otitis media, comparatively few otologists are employing this type of treatment. Doctor Fletcher's paper on this subject will surely claim your interest and doubtless add to the increasing popularity of this highly efficient therapy. Hitherto, as we well know, medicinal treatment of otorrhea has been extremely disappointing, and this also applies to surgical procedure for the relief of this prevalent disease.

I wish to add confirmatory data to Doctor Fletcher's results. My experience with iodin powder (Sulzberger) in the treatment of chronic aural suppuration covers a period of three years, comprising a series of 107 cases in private and clinical practice. There were forty-one males and sixty-six females, ranging in age from six months to seventy-two years—average, thirty-two years. Duration of the disease varied from two months to fifty-two years; one ear had been discharging for forty-seven years, and two for a period of fifty years. Average: males, eleven years; females, eight years. Approximate number of treatments required to cause cessation of the discharge ranged from 5 to 120, averaging nineteen treatments. Twelve patients had recurrences, in ten of which the ears subsequently dried. Only eight patients in my series of 107 have not yielded to the iodin powder treatment—truly remarkable results, indeed, almost incredible. When perforations of the tympanic membrane are small, response is markedly slower or negative. In all the cases due to scarlet fever, the response was prompt and permanent.

Seemingly, the results obtainable with iodin powder (Sulzberger) in the treatment of chronic purulent otitis media is a conspicuous achievement in otologic therapy.

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FRANK A. BURTON, M. D. (1206 Bank of America Building, San Diego).—For about one year I have employed the iodin powder (Sulzberger), after the technique of Doctor Lederman, in chronic purulent otitis media. My experience with this treatment in both private and clinic practice involves a smaller series of cases than that of Doctor Fletcher. My results with this special therapy have been gratifying, but I fear that I have succeeded in a smaller percentage of my cases. It is probable that not more than 80 or 85 per cent of the chronic purulent otitis media

ears which I have treated with the powder have become dry, and several of those have been reinfected by head colds or through diving.

It is my impression that when chronic discharging ears become dry the patient should be warned against taking unnecessary chances of his middle ears becoming reinfected through colds or getting water in them. And that if reinfection from either of these or from any other cause does take place, that he should, without delay, have a treatment or two with the iodin powder (Sulzberger) by the Lederman technique. Delay is dangerous and expensive.

Among the patients whom I have treated with the iodin powder there were two especially sensitive to iodin and they were made much worse by the treatment. Each one of these two cases had previously undergone a radical mastoidectomy and the mastoid trough in each case had continued to discharge. In one case the radical had been done about five years previously. And the other operation was performed about twenty years before, but had continued to discharge. In the latter case, so great was the sensitivity to iodin that distressing pain, swelling, inflammation, and profuse watery discharge followed promptly the administration of the powder, despite the careful painting of the auditory canal with ointment prior to blowing in the powder. In both cases, despite using the weakest Sulzberger iodin powder, the treatment had to be discontinued.

In several of my chronic purulent otitis media cases radical mastoidectomy had been urgently advised previous to trying this therapy. And it came about that the surgery was unnecessary. One case which failed to respond satisfactorily to the powder proved to be cholesteotomatous and a radical mastoidectomy was performed. In this case the iodin powder helped in drying up a stubborn discharge in the combined middle ear and mastoid cavity.

It is my impression that radical mastoid troughs would dry more promptly if the iodin powder were used routinely as part of the postoperative treatment.

Watery discharge from the middle ear and from the external auditory canal also respond nicely to the iodin powder therapy. I include the so-called "weeping eczema" or "moist eczema," always using the weakest Sulzberger powder, and noting previously the absence of active dermatitis of the auditory canal or of the auricle.

The points emphasized by Doctor Fletcher cannot be too deeply borne in mind, viz., (a) thorough cleansing, including the middle ear cavity with all its recesses, and the eustachian tube; (b) apply alcohol; (c) thoroughly dry, then blow in a liberal amount of the iodin powder (Sulzberger).

For two reasons it is hoped that more otologists will soon employ this valuable therapy in the treatment of their cases of chronic purulent otitis media:

1. Radical mastoidectomies do not always dry discharging ears. Try iodin powder (Sulzberger) first, and use Doctor Lederman's technique.

2. Radical mastoidectomies often reduce the acuity of the hearing. The use of the iodin powder (Sulzberger) does no harm.

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ROBERT C. MARTIN, M. D. (384 Post Street, San Francisco).—We began using the boric iodin powder (Sulzberger) about three years ago after talking to Doctor Lederman of the good results obtained in selected cases.

It is of value in those patients who have sufficiently large perforations to permit drying and cleaning and to assure there will be no blocking by caking of the powder, which sometimes occurs.

Several obstinate cases of delayed healing after radical mastoidectomy cleared up promptly on removal of exuberant granulations and insufflation of the powder.

It is a distinct addition to the treatment of chronic purulent otitis media.

THE ADENOMATOUS GOITER*

A CLINICAL STUDY

By W. P. KROGER, M. D.
Los Angeles

DISCUSSION by H. H. Stears, M. D., San Francisco; Clarence G. Toland, M. D., Los Angeles; William E. Costolow, M. D., Los Angeles.

THE adenomatous goiter has been a subject for controversy among clinicians and pathologists for thirty years. Opinions concerning its etiology and pathology have fluctuated widely, resulting in two distinct divergent groups. One group believes adenomas to be a stage in the development of colloid or hyperplastic goiters, and the other maintains that adenomas are a new growth or pathologic process superimposed upon a preexisting simple goiter. Neither group seems able to satisfactorily complete the chain of evidence supporting its views. The present opinion of the majority of authorities, especially in the United States, tends to favor the theory that the common type of adenoma is not a true tumor formation, but is the product of proliferative and hyperplastic changes in simple or hyperplastic goiters.¹

MECHANISM OF GOITER CHANGES

The mechanism of these changes has been explained in various ways. One of the most interesting of these is Rienhoff's involutional theory.² He asserted that the hyperplastic thyroid gland, or even the normal gland, was subject to a process of involution somewhat analogous to the regressive changes that take place in the breast, the ovary, and the uterus. This involution occurred spontaneously or was induced artificially, as when iodin was being administered. He confirmed his views by removing and examining sections from the thyroids of seven patients before, during, and after treatment with iodin. Involution or reversion to a resting or normal state could be demonstrated in all cases, coinciding with the clinical improvement noted; but he observed that in certain areas of the glands the process varied in degree. Where there was an extreme degree of involution (hyperinvolution) an excessive amount of colloid was deposited, producing an enlargement of the area, showing grossly as nodules on the surface of the gland. An extension of this process and repetitions over a period of months or years, as observed in spontaneous involution, would result in degenerations and possibly cysts, thus forming the adenomatous goiter. The capsules of these adenomas were produced by the expansion and pressure of the colloid exerted against the normal fibrous tissue stroma of the gland.

Clinical observations will tend, in a measure, to support these views. Frequently patients with smooth symmetrical hyperplastic goiters, while receiving a course of iodin preliminary to operation,

will complain of their goiter becoming more obvious and irregular in outline. Examination will show their thyroid glands to be larger, more firm, and somewhat nodular. Most likely if an operation did not intervene and this process were to continue, a so-called adenomatous type would result.

About the fetal adenomas, which form about 15 per cent of all adenomas, there is little diversity of opinion. They are definitely classed as true benign neoplasms. Their genesis is not certain, but it is generally accepted that they arise from the interstitial cell rests of Wölfler.

EFFECTS OF IODIN

Ten years ago Plummer first began the extensive use of iodin in the treatment of goiter. Beyond question this has been one of the major therapeutic advances of the past decade and has proved to be the most important single factor in the control of goiter. The treatment could well be called the "Plummer treatment." As a result the use of iodin has become so popular, particularly through the use of iodized salt, that literally millions of people use it every day.

A few years ago the indiscriminate use of iodin in goiter was considered highly dangerous. The chief danger was the production of an iodin hyperthyroidism, or of converting a nontoxic goiter into a toxic one. This was considered to be especially true of the adenomas. For a time the consensus of opinion was never to give iodin to these patients. Gradually investigators have discovered these fears to be greatly exaggerated, until at the present time very many clinicians prescribe iodin to toxic adenomas and exophthalmic goiter patients with equal assurance. There are still a few who firmly persist in the earlier views and it may be entirely possible that in some localities iodin affects the thyroid differently from the way it does in others.

In a survey of our case records of a thousand patients with goiters of all types, there was only one case of true iodin hyperthyroidism. A few of the patients responded unfavorably to iodin, but this tendency was as prevalent among the exophthalmic types as among the toxic adenomas. Many patients with nontoxic adenomas who had taken iodin on their own initiative, reported no ill effects such as might be attributed to a toxic adenoma or an iodin hyperthyroidism.

The patients who reacted unfavorably to iodin usually noted gastric irritation, an aggravation of the thyrotoxic symptoms, and a sense of general discomfort.

Some patients showed little or no reaction to iodin. The metabolic rate remained relatively unchanged and there was no improvement in the clinical signs and symptoms. These we called iodin-fast. Usually this type had used iodin over a long period, but a few patients, who had never used iodin before and who were receiving iodin for the first time, belonged in this group.

* Read before the General Surgery Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

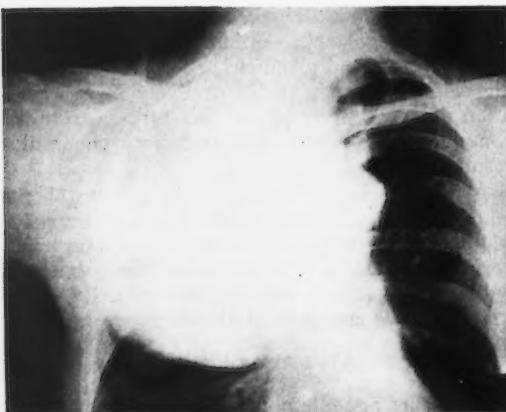


Fig. 1.—Roentgen-ray graph of a large intrathoracic goiter. Patient in good health.

EFFECTS OF RADIOTHERAPY

About 10 per cent of the toxic adenoma patients had received irradiation in varying amounts before coming to us. None of these were favorably influenced. In the recent literature³ a few clinicians reported complete clinical cures following radiotherapy in toxic adenomas. Naturally, patients receiving benefit from radium or x-ray would not consult the surgeon; but our observations, based upon a considerable group of unimproved patients, some of whom had been treated by authorities in radiotherapy, leads us to deplore this method.

TOXIC ADENOMAS WITH HYPOTHYROIDISM AND HYPERTHYROIDISM

The popular conception of a toxic adenoma, from a clinical point of view, includes among other factors an increased basal metabolic rate. It is true this applies to the great majority of patients, but there are a certain definite few in whom there will be found a distinctly low metabolism.

In a recent analysis of two hundred cases of toxic adenomas we found fifteen patients, or about eight per cent, to be of this hypothyroid type. The metabolic rates varied from minus fifteen to minus twenty-three. In many respects the symptomatology paralleled that of the adenomas with increased metabolic rates, but there were definite essential differential features. Among these was a lessened tendency to weight loss; seven patients being considerably overweight. Their mental reactions were slow or confused and there seemed to be a general physical sluggishness.

These patients were given thyroid extract as a preoperative measure, and this was continued after thyroidectomy, until the residual gland had apparently attained its maximum recovery. It was assumed the adenoma produced a hypothyroidism by pressure upon the normal thyroid tissue as well as causing a toxemia from a secretion of its own.

All of this group were greatly improved one year after thyroidectomy, but it was noticeable the recovery period was very slow, and some patients required thyroid extract for more than the year.

This small group of cases presented the rather curious combination of hypothyroidism and symptoms simulating hyperthyroidism coexisting in the same individual. The hypothyroid features of these patients might lead one to hesitate before advocating a removal of the adenomas, fearing to still further impair the function of an already deficient gland. However, clinical end-results following a properly performed partial thyroidectomy, where an effort has been made to conserve normal thyroid tissue, does not tend to support this hypothesis. Not only is the patient relieved of the toxic adenoma with its attending disability, but the normal tissue, being relieved of pressure, tends in a measure to regenerate and approach the status of a normal gland.

The toxic adenomas with hyperthyroidism present an entirely different problem. Their symptomatology closely simulates that of the hyperplastic or exophthalmic goiter and it is frequently impossible to grossly differentiate a purely toxic adenoma from the so-called mixed type in which the normal thyroid gland has undergone hyperplasia.

Many of these patients seem to show pronounced toxic changes, especially damage to the cardiovascular system, making prolonged pre-operative treatment essential. Unusual degrees of hypertension frequently occur and an operation may be more hazardous than in other types of goiter. The response to a subtotal thyroidectomy is relatively slow and the end-results at the one-year period often show a persistence of moderate toxic symptoms. In a recent study of cases of goiter with hypertension⁴ it was shown that following thyroidectomy there was a greater tendency of the toxic adenomatous group to maintain an elevated blood pressure than was observed in the exophthalmic group. The explanation probably lies in the fact that the average toxic adenomatous patient is beyond forty years of age and the majority of these patients have had a goiter for many years before seeking surgical relief.



Fig. 2.—Case of malignant adenoma. Duration of malignancy three years. Vocal cord paralysis. Large mass extending into pharynx. Still living. Receiving radiotherapy.

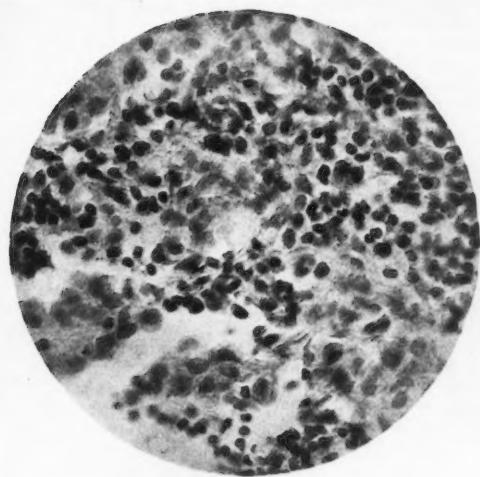


Fig. 3.—Photomicrograph of lymph node attached to malignant adenoma in nineteen-year-old girl. High power. Note metastatic cells invading lymph tissue.

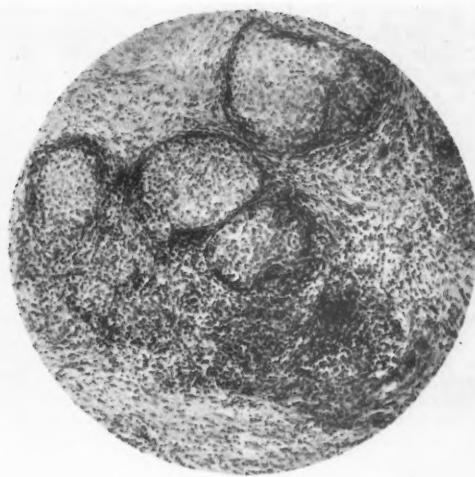


Fig. 4.—Photomicrograph of malignant adenoma in nineteen-year-old girl. Low power. Note invasion of the malignant cells into the fibrous tissue stroma.

The slow persistent thyrotoxicosis apparently produced a degree of permanent damage to the cardiovascular and nervous systems. It is very probable, too, that the secretion from a toxic adenoma is different from and more toxic than the secretion from exophthalmic or hyperplastic goiters. No method as yet has been devised to disprove or confirm this point.

ADENOMAS AND MALIGNANCY

In a consideration of thyroid enlargements the question of malignancy must be given some attention. This is especially true when the enlargement is nodular, denoting the presence of adenomas, for it is this type that is potentially malignant.

Some of the rarer malignant tumors, such as the sarcomas,⁵ may develop in the normal thyroid gland, but the great majority of malignant goiters have their origin in a benign adenoma.

The fetal adenomas, being true tumors, have greater potentialities for malignancy than the other types; and it has been found⁶ that 90 per cent of malignant goiters will show microscopic evidence of fetal adenomatous cells.

Clinical observations in these cases has revealed that in practically every patient the adenoma was clearly obvious for a period of one to thirty years preceding the malignant change.

A relatively rapid increase in the size of the goiter is the first intimation of a possible malignant development in many patients. Others first note symptoms of pressure or a vocal-cord paralysis. Few cases are definitely diagnosed prior to operation and microscopic examination.

Occasionally a sudden hemorrhage may occur into an adenoma, especially in an elderly arteriosclerotic individual. The enlargement and the reactive thyroiditis will produce a clinical picture almost exactly simulating a carcinoma.

It is an interesting and curious fact that a policy of procrastination is frequently advocated in cases of nontoxic adenomatous goiter. Perhaps the

clinician does not realize that sooner or later this type of goiter will degenerate into the toxic variety. The course will be slow and it may be years before the patient will show symptoms of toxicity. It has been shown that the average length of time before an adenomatous goiter becomes toxic is about thirteen years.

In addition to the dangers of a slow insidious toxemia, causing more or less permanent damage to the nervous and cardiovascular systems, the patient with an apparently inactive adenoma runs some risk of a malignant development.

The incidence of malignancy in goiters is only about two per cent, so this risk is not great, but its existence should not be ignored.

SUMMARY

1. In the etiology of adenomatous goiter the majority of authorities believe the adenoma to be a stage in the proliferative and degenerative development of simple or hyperplastic goiter.
2. Clinical observations upon patients with goiters who are being treated with iodin tend to support Rienhoff's involutional theory.
3. Fetal adenomas are true benign neoplasms.
4. Iodin therapy is not dangerous in patients who have toxic or nontoxic adenomas.
5. Iodin hyperthyroidism occurred very infrequently in our series of patients.
6. Radiotherapy was of little or no value in thyroid adenomas.
7. Some patients with low metabolic rates showed symptoms of thyrotoxicosis.
8. Any adenoma of the thyroid is potentially malignant and a policy of procrastination should not be advocated in its management.

1930 Wilshire Boulevard.

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DISCUSSION

H. H. SEARLS, M. D. (University of California Hospital, San Francisco).—The author's paper presents an excellent summary of present-day conceptions of the nodular or adenomatous goiter. That the encapsulated adenoma satisfies all of the pathologic requirements of a true benign tumor still seems evident to many students of thyroid disease. In different endemic regions clinical variations may have modified the picture so as to lead to differing hypotheses concerning its etiology.

The patient with an advanced and neglected toxic adenomatous goiter remains an excellent operative risk, for the mortality rate in the surgical treatment of such patients is almost nil. However, cardiac decompensation should be relieved by bed rest and digitalis therapy. At the University of California Hospital, iodin medication before operation has been limited to patients with the hyperplastic or exophthalmic type of goiter.

X-ray therapy is contraindicated in adenomatous goiter, for such treatment tends to destroy the remaining normal gland tissue without affecting the adenoma.

Doctor Kroger has described adequately the common picture of the patient suffering from toxic goiter together with an associated hypothyroidism. In such instances the lowered metabolism, as shown by increased weight, feeling of cold and lowered basal metabolic rate, offers false reassurance to patient and consultant, whereas the tachycardia, increased irritability and emotionalism accurately betray the underlying toxicity.

When the patient with toxic adenoma exhibits hypertension, removal of the goiter rarely affects the blood pressure other than to check its further rise.

The threat of malignant degeneration is ever present for the patient with nodular goiter, and is the strongest indication for surgical removal of the adenoma.

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CLARENCE G. TOLAND, M. D. (1930 Wilshire Boulevard, Los Angeles).—My thoughts correspond to those of Doctor Kroger. I am especially anxious to emphasize the necessity of considering all adenomas as potential malignancies. Only a small percentage become malignant, it is true, but the conservative attitude of *laissez faire* toward most adenomas is responsible for the occurrence of practically all malignant goiters. In the nineteen-year-old girl cited with the malignant adenoma, no malignancy was suspected before operation. The goiter was removed because of its unsightliness and the knowledge that eventually it would cause trouble. Had we procrastinated until it bothered her, we should have been faced with a hopeless problem. How much less reason is there with middle-aged patients having long-standing adenomas to placate with the philosophy of procrastination.

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WILLIAM E. COSTOLOW, M. D. (Soiland Clinic, Los Angeles).—Toxic adenoma is not as well adapted to roentgen treatment as exophthalmic goiter. In the latter condition it has been shown that about the same percentage of favorable results may be obtained by

roentgen treatment as by surgery. However, the results of radiation treatment of toxic adenoma are not nearly as unsatisfactory as this paper indicates. Undoubtedly surgery is the method of choice in the treatment of the majority of toxic adenomas. The operative mortality is very low and the results have been very good. In some cases, however, there may be contraindications to surgical removal. Some patients also refuse operation. If patients with toxic adenomas show a high metabolic rate, radiation may be justifiably used, with the expectation that the metabolism will be reduced to within normal limits in the majority of cases. The adenomatous tumor, however, will not be reduced much in size, if at all. In other words, in toxic adenomas with a high metabolic rate it is possible to reduce the metabolic rate and relieve the toxicity with radiation, although the patient will be left with an adenomatous tumor. If the tumor is small it may be of little consequence afterward, except from a cosmetic standpoint, but if the adenomatous mass is causing pressure symptoms, which frequently is the case, then surgery must be resorted to in order to relieve the patient. In toxic adenomas without pressure symptoms, radiation may be the only treatment that is necessary. In case of failure following radiation treatment, surgery can always be resorted to and the patient will undoubtedly be a better surgical risk following the improvement in the toxic symptoms produced by the radiation.

As Doctor Kroger has stated, there is a small danger of malignant degeneration in these tumors. Following radiation treatment the danger must be very small, as Pfahler collected from the literature twelve hundred cases of toxic adenoma which had been treated by radiation methods and did not find a single case in which there was a later development of malignancy.

STERILITY*

REPORT OF SEVEN HUNDRED CONSECUTIVE CASES

By FREDERIC M. LOOMIS, M. D.
Oakland

DISCUSSION by Margaret Schulze, M. D., San Francisco; Louis I. Breitstein, M. D., San Francisco; Lyle G. McNeile, M. D., Los Angeles.

NINE years ago the writer had the honor of reporting to this section a study of 150 consecutive cases of sterility. Since then Dr. John W. Sherrick and Dr. James V. Campbell have become associated with him. We now report jointly an analysis of 732 consecutive cases of this type, all private patients in our own office. The writer knows of no greater medical happiness than putting a baby in the arms of a mother who has so longed for one that she has been impelled to come and ask for it, and there are few problems of diagnosis more challenging and more complex.

We have taken fifteen or more facts from the history of each patient, making the appalling number of some fifteen thousand facts to be correlated and interpreted. Many of these facts of history and physical findings have been of little or no value for our specific purpose, though frequently of great value indirectly to the patient,

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

as will be shown. We have long felt that fertility is a relative thing, as pointed out by Reynolds and Macomber.

COMPLETE EXAMINATION NECESSARY

It has long been evident that anything less than a reasonably complete and patient series of examinations was quite useless. Nearly every patient had been to her own family doctor at previous times and had been told that he saw no reason why she should not become pregnant. We realize that many women go to their own good doctors who find an eroded cervix or other condition which they are entirely competent to treat, and these women we never see, as their prayers are answered without further help. In a sense, therefore, this group of 732 patients is quite definitely an adversely selected one.

PLAN OF EXAMINATION

It need hardly be stated that the examination consists of four or five parts, somewhat after the Meaker plan, including as a routine an unusually careful history, a complete physical examination of the woman, a Rubin test of passing carbon dioxide gas through the tubes, and a postcoital examination (Huhner) made within about an hour after exposure. To these are added condom examinations, metabolic tests and other determinants as indicated, but we do not include personal examination of the male, pelvic examination under anesthesia, nor other recommended procedures unless definitely demanded by circumstances.

From a practical standpoint for those who are interested in doing this pleasant work, it may be stated that we have found it advisable to make it perfectly clear to the patient before we even take her history that these various examinations are essential, that they must be made before we can tell her one useful fact (except when an impasse is reached before their conclusion), and that we do not want to begin unless she is willing to "carry on" patiently for a considerable time. She is told that as soon as these tests are completed we shall give her a fair opinion as to her prospects, and explicit directions or treatment as needed over a somewhat indefinite time, six months to a year. For this, the patient is told that she will pay a definite inclusive fee which will cover all ordinary treatment, and that this fee, contrary to all other custom in our office, is to be paid in advance. This requirement is based upon the observation that patients who are asked to pay for each procedure as it is advised are likely to say, "Let's wait till next month and perhaps I won't need it then," and this leads to interminable procrastination; and further, we know that when a woman has paid for a thing she is very likely to do as she is told and to come and get it! And results are what we both want.

THE RUBIN TEST

Let us take first the fundamental question of closed or open tubes. The Rubin test is the great-

est advance made in many years, as until we had it we so frequently wasted our own time and the patient's money in attempting to do something with a perfectly hopeless patient—hopeless because whatever we might do elsewhere, we could not make her conceive with closed tubes. The importance of this is shown by the fact that only 53 per cent of the 474 patients on whom this test was made had normally patent tubes, 13 per cent being entirely and hopelessly closed after many attempts. Still more interesting is the fact that of the remaining 34 per cent whose tubes, closed on the first trial and partly or completely opened by repeated inflations, nearly 20 per cent, regardless of other conditions, promptly became pregnant. We believe the chief value of the Rubin test is in diagnosis, but in view of these figures it is impossible to deny its therapeutic value also, as pointed out in the excellent recent paper of Stein and Leventhal. In other words, fifty-seven women were saved useless treatment, and about thirty women apparently owe their babies directly to the opening of the tubes by this means. Although the question is frequently raised, we do not encourage the surgical opening of closed tubes, as we cannot promise its permanency, nor that the woman will become pregnant. On the few occasions when the patient has wanted surgery, we have used iodized oil injections and x-ray to determine the points of closure. We use x-ray in this way very infrequently now, feeling that it adds very little to our working knowledge.

THE HUHNER TEST

We find the postcoital examination of the woman of much more importance and interest than the examination of the condom specimen, since it shows the actual condition of the spermatozoa under the hazards to which they are normally subjected. Both are necessary in all questionable cases. Fifty-three per cent of these examinations were normal; that is, there were very numerous spermatozoa, well shaped, active and with normal progressive motion found either in the vaginal pool or in the cervical mucus; 37 per cent were only fair, the number of spermatozoa being markedly decreased or there were defects in form or motion; and in 10 per cent there was a complete aspermia, a practically hopeless condition. A number of these husbands have been under treatment, but only with moderate success and, so far as I know, with no resulting pregnancies. With a little tact it is not difficult to persuade a patient to have these postcoital tests made nor to administer any necessary treatment to the woman; but when the defect is found to be in the man, a great deal of tact is necessary to soften the blow. I suppose all men are convinced that they are born "good," and it is a serious psychic trauma when a man finds that he is not.

The observation of the fate of the spermatozoa in the vaginal and cervical canals is important in many ways. It has been stated frequently that the acidity of the vaginal secretion is of no importance, as it is overcome at once by the alkalinity

of the semen. I cannot agree with this as I have found in several instances every spermatozoon dead in a highly acid vagina, and in the same patient millions of living spermatozoa after intercourse which had been preceded by an alkaline douche; and in several patients pregnancy has immediately resulted with no other treatment. Many times lively spermatozoa will be found in the vaginal pool, but none living can be found in the cervix, either because of a sticky discharge from erosions or, I am convinced, from the dry tenacious mucus so frequently found with cervical stenosis. It has been argued that a cervical canal large enough to afford exit to menstrual blood is large enough to admit spermatozoa. This is quite true; but with a tight cervix, poorly drained of its own mucus, we often find a surface like sticky fly-paper over which the spermatozoa pass with great difficulty, to say the least.

NEW GROWTHS AND INFLAMMATORY TROUBLES

Three per cent of the total number of patients had fibroids or other tumors of sufficient importance to interfere; seven per cent had definite evidence of old inflammatory trouble, some following induced abortion, but only one or two following gonorrhea, a surprisingly small number which is probably explained by the comparatively high type of patient. In several of these, only one side being affected, pregnancy promptly followed surgical removal of the trouble, and we now feel justified in advising such procedure.

MALPOSITION, STENOSIS AND EROSION

Thirty per cent had retroversions, and in 42 per cent there was acute anteflexion with a moderately small fundus. We know that many women with retroversions become pregnant easily, but we usually insert a pessary for trial at least, hoping that we may increase the chances; the anteflexed patients, on the contrary, are most likely to show marked stenosis, perhaps because of underdevelopment, itself an adolescent glandular defect. These patients we usually dilate, using the negative pole of the galvanic current, a simple and inexpensive office procedure. Curettage is never done without specific reason, such as menorrhagia, polyps, or other direct indication. Linear cauterization, however, is done whenever there is cervical erosion of any consequence and the incidence of cervicitis, erosion and excessive discharge is 38 per cent. The results are almost uniformly good.

THE ENDOCRINE QUESTION

And now, finally, a word about the most interesting and most elusive condition of all, the endocrine picture. Sixty-seven per cent of these women were so evidently deficient in this respect that it was at once noted; that is, there were obvious defects in the production of pituitary, thyroid or ovarian secretions. There were some who menstruated only two or three times a year, probably being deficient in all three important glands; some presented typical pictures of hypothyroidism with dry skin and hair, overweight

and slow pulse; some had the severe menstrual headaches with nausea, and the so-called pituitary girdle, suggesting deficiency in the anterior pituitary. These would seem particularly amenable to treatment, but as yet only about 35 per cent have become pregnant. Many of these patients presented other problems as well. Two types of preparations have been outstanding, ordinary thyroid pushed at times almost beyond conservative limits and, hypodermatically, the comparatively recent sex hormone products. I recall one girl who flowed frequently and irregularly, bleeding slightly for weeks at a time. We curetted her, found a mild endometrial hyperplasia only, treated her with several of the standard drugs to control bleeding, and the condition was not helped in the least. Finally, though she was a slender girl with a normal metabolic rate, we gave her thyroid in fairly large dosage. The menorrhagia promptly ceased and in a short time pregnancy occurred as desired. We have long felt that the metabolic rate is not the sole criterion of thyroid efficiency, by any means, and indeed it may be deceiving. We are interested in seeing this observation on the part of others, as in the recent publication of Waters and Williams.

We have used the female sex hormone rather empirically and do not see how we can be explicit in our conclusions, as several conditions are almost necessarily being treated at once and judgment is still as difficult as Hippocrates thought it. Unfortunately for speeches at medical conventions, our patients want babies, not statistics, and want them soon. However, there are fifteen or more in this series with whom we had exhausted all our resources who promptly became pregnant when they were called back and given the female sex hormone preparations. We reach a place in the treatment of these girls when everything mechanical has been corrected and we still fail and do not know why—evidently because of biochemical conditions which are still quite beyond our grasp.

There are 732 patients in this series. One hundred and ninety-three of these have not been treated at all, having come too recently to be included fairly in computing results or having not even completed their examinations, leaving 539 who went through the required tests and treatment until successful or until told that pregnancy was unlikely or impossible. Fifteen of this number were dismissed as hopeless because of their husbands' complete aspermia, and fifty-one went no further because repeated trial showed apparently hopelessly closed tubes, leaving 473 who received partial or complete treatment so far as we could give it. Two hundred and eight, or 44 per cent, became pregnant, and from these women we have secured 331 pregnancies and 237 living babies. It is an interesting fact that thirty-six, or 17 per cent, of these who became pregnant suffered involuntary abortions, as if nature were protesting against a pregnancy forced upon her, though thirteen of these eventually went through to term. However, seeking further protests from nature to what might be called an "induced pregnancy" such as these, we find that the incidence of toxemia is

not unusually high, 29 per cent having moderate or severe nausea and only 4 per cent showing late toxemia of some degree, only one instance of eclampsia occurring.

CONCLUSIONS

The histories of 732 consecutive sterility patients are analyzed, of whom 539 completed their examinations and 473 were treated. Of these, 208, or 44 per cent, became pregnant.

Fifty-three per cent gave normal Rubin tests, and 13 per cent were dismissed because repeated efforts showed total closure of tubes. Repeated efforts produced partial or complete opening of the 34 per cent, which were unsatisfactory at first trial, and nearly 20 per cent of these women became pregnant, suggesting the therapeutic value of this procedure.

Fifty-three per cent showed normal spermatozoa after coitus, 37 per cent were only fair, and 10 per cent showed complete aspermia, giving a high percentage of male responsibility in sterility or relative infertility.

Cervical stenosis and erosion were found in 42 per cent and 38 per cent, respectively, and are considered very important causes of failure. Both are amenable to office treatment.

Sixty-seven per cent showed endocrine dysfunction, most of whom were treated with thyroid or preparations of the female sex hormone. Basal metabolism is not relied upon alone in judging hypothyroidism. Thirty-five per cent of these patients became pregnant.

The incidence of toxemia is not higher than normal, but involuntary abortions occurred in 17 per cent.

350 Twenty-ninth Street.

DISCUSSION

MARGARET SCHULZE, M. D. (University of California Hospital, San Francisco).—Doctor Loomis is to be congratulated upon the excellence of his results in a field which has in the past been difficult and often unsatisfactory. Undoubtedly the thoroughness with which he has made his studies and the intelligent cooperation of a superior type of patient in carrying out his treatment have contributed very largely to this success.

The Rubin test has been one of the great advances in the study of these patients and is essential in all cases where the fault has been found to lie with the woman. All authorities are agreed that it has definite therapeutic as well as diagnostic value. Its very simplicity makes it necessary to sound a note of warning to the inexperienced, and to reemphasize the fact that there are certain contraindications to its use. The main one of these is, of course, the presence of any evidence of infection of the lower genital tract and it is absolutely necessary that any cervical or vaginal discharge be cleared up completely by cautery or other appropriate treatment before the test is undertaken. Because of the theoretical danger of displacement of endometrial fragments through the tube with the possibility of an endometriosis, it is advisable that the test be done only in the early part of the intermenstrual cycle. As Doctor Loomis has stated, the results following plastic operations on closed tubes are not brilliant; yet in an occasional case, where the closure is due to peritubal adhesions and the mucosa remains comparatively normal, success may be obtained. It seems advisable to follow such operations by tubal insufflation.

In the past the greatest success has been obtained in those cases in which it was possible to correct some definite mechanical obstacle, while those in which the sterility was due to constitutional defects the result of endocrine deficiency remained more or less hopeless. The recent great advances in this field make it seem probable that in time we shall develop efficient therapeutic agents here also.

I should like to ask Doctor Loomis whether his statistics confirm the statements of Unterberger, Pfannstiel, and others, that pregnancy following the use of an alkaline douche in cases where the sterility seemed due to a hyperacidity of vaginal secretion resulted in the production of male offspring only?

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LOUIS I. BREITSTEIN, M. D. (516 Sutter Street, San Francisco).—Doctor Loomis, in his paper on sterility, thought enough of the question of closed tubes to give considerable mention to the Rubin test. He stated that the chief value of the Rubin test was diagnostic, but in view of his statistics the therapeutic value was not to be denied. Interesting in this respect is the fact that thirty of the mothers whose tubes were closed became pregnant when the tubes were completely or partially opened by repeated inflations. Did Doctor Loomis in his experience have any of his cases terminate in tubal pregnancies? One must ever be mindful of this possibility.

Further, fifty-seven women were saved useless treatment, evidently because their tubes were entirely and hopelessly closed even after many attempts with inflation. One must not be altogether too pessimistic in these cases, for considerable tact must be used to "soften the blow" and it is best to leave the question open to time. Time brings about changes even in what appear to be hopelessly closed tubes, and often to our surprise a patient whom we dismissed as hopeless returns pregnant and goes to term. Problems in sterility are ever occurring; not all of them are simple and most are elusive, but Doctor Loomis has presented us with an intelligent and scientific scheme of how they should be attacked.

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LYLE G. MCNEILE, M. D. (Pacific Mutual Building, Los Angeles).—There has been a conspicuous awakening of interest in the problem of sterility during the past decade. While the treatment of sterility is in many instances empirical, the causes have been very well tabulated and recognized, diagnosis has been greatly improved, and great advances in treatment are being made. Doctor Loomis has definitely shown that sterility is not a simple one-sided problem that requires not only a gynecologic history and abdominopelvic examination of the patient, special gynecologic study, medical-endocrine history, examination of both husband and wife, but often a painstaking genitourinary study of the husband. A sterility study which ignores the husband as a possible factor is worthless. Doctor Loomis has pointed out the absolute necessity of requiring patients to submit to a complete study. I, too, am convinced that the Rubin test is of great therapeutic as well as diagnostic value. This paper is timely and complete; it merits the careful study of all obstetricians and gynecologists engaged in sterility studies.

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DOCTOR LOOMIS (Closing).—Contrary to our expectation, we have not yet had an ectopic pregnancy in a sterility patient, although I am sure some of our successful patients have had incompletely patent tubes, the closure probably being near the fimbriated end of the tube. Doctor Schulze asks an interesting question, which I can answer only partially, but the answer is interesting also, though it may not mean much. In a small group of twenty-seven successful patients of high vaginal acidity who were directed to use alkaline douches, there were born nineteen male babies and only eight female.

TOXEMIAS OF PREGNANCY*

By LOUIS I. BREITSTEIN, M. D.

AND

ABRAHAM BERNSTEIN, M. D.

San Francisco

Discussion by E. M. Lazard, M. D., Los Angeles; Margaret Schulze, M. D., San Francisco; John A. Sperry, M. D., San Francisco.

THIS paper discusses the toxemias that occur in the latter half of pregnancy. They are of grave concern to the obstetrician because:

First. Any pregnant woman, irrespective of age or parity, can develop a toxemia. Tables 1 and 2 indicate incidence under certain conditions.

Second. Any toxemia, no matter how simple or mild, may develop into a severe form, resulting in serious damage or death to either mother or child, or both.

Just what it is and how it is caused is still an enigma. Theories as to its etiology are ever being advanced; yet year after year passes and we are no nearer the solution. The newer methods of treatment, so ably described, are not living up to their promises, and the pathologico-anatomical findings cause much controversial discussion.

However, there are two certain facts that we all can subscribe to, namely, that the toxemias are concerned with a disturbed unbalanced metabolism, and that it is due to the presence of a fetus. That is as far as we have gone and that was the status twenty years ago. True, much information has been collected through laboratory examinations of blood, urine, and isolated chemical substances; the reports in the literature are too numerous to mention. The laboratory yet may solve the problem. On the other hand, the only real contribution that has yielded any result is the one made through clinical and statistical study, namely, *prenatal care*.

STATISTICS FROM MOUNT ZION PRENATAL CLINIC

We submit for your consideration a clinical and statistical study of the cases of toxemia from the prenatal clinic at Mount Zion Hospital, San Francisco.

In the past sixteen years, we have seen at the Mount Zion obstetrical clinic 8,054 maternity cases. These patients have registered at the clinic for prenatal care; were under observation all through their pregnancy; were delivered in our indoor service; and were followed up by our postnatal service. From this material 222 (2.6 per cent) cases of toxemia in latter half of pregnancy were collected. They were classified as toxemias due to (1) preéclamptic toxemia; (2) eclampsia; (3) toxic chronic nephritis; (4) very faint trace of albumen following a relative increase in blood pressure; (5) sudden abnormal increase in weight.

* From the department of obstetrics, Mount Zion Hospital.

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the sixty-first annual session, Pasadena, May 2-5, 1932.

TABLE 1.—*Age of Patients in Two Hundred and Twenty-Two Cases of Toxemia*

Age Period	Number	Per Cent
15 to 20 years	31	14
20 to 30 years	98	43.5
30 to 40 years	83	37.6
40 to 45 years	10	4.9

However, this classification was made purely for statistical study.

From Table 3 we note that in the first five years, 1916 to 1920 inclusive, there were twenty-six cases of toxemia. These cases were diagnosed according to the complete symptom syndrome, namely, albumen in the urine; high blood pressure, over 140; edema, and other subjective symptoms. The following five years, 1921 to 1925 inclusive, we show an increase in the number of cases to seventy-one, and credit this increase to the fact that our prenatal clinic began to weigh¹ patients at their regular periodic visits. Sudden abnormal increases in weight were recognized as disturbances in metabolism and classed as beginning toxemias.

TABLE 2.—*Parity Groups in Two Hundred and Twenty-Two Cases of Toxemia*

Parity	Number	Per Cent
Para 0	104	46.8
Para 1	55	24.6
Para 2	32	14
Para 3	17	7.6
Para 4	6	2.6
Para 5	3	1.3
Para 6	2	0.9
Para 7	0	
Para 8	2	
Para 9	0	
Para 10	1	

mias. Patients showing a relative increase in blood pressure, although the reading was considered normal, associated with a slight trace of albumen, were also classified as beginning toxemias. In view of this finer diagnosis, the subsequent five years show a still further increase in the number of cases of toxemias.

The prenatal study from the list revealed the interesting fact that prenatal care does not prevent toxemias. It makes earlier diagnosis possible and it does show that prenatal care decreases the number of cases of eclampsia and toxic deaths. We explain this by the fact that we recognize our toxemia patients earlier, and prevent serious damage by instituting the proper treatment.

PRENATAL CLINIC ROUTINE

The routine followed in the Mount Zion Hospital prenatal clinic is as follows:

When the patient first visits the clinic a careful history is taken and at this time a past history of acute infectious diseases of childhood, or of later life, is elicited and carefully recorded. Following this the patient is given a complete physical examination, paying particular attention to blood pressure, weight, and sites of focal infection. Complete blood and urine examinations are

TABLE 3.—*Grouping of Mount Zion Hospital Patients.*

Years	No. of Cases	No. of Toxemias	Pre-Eclamp.	Eclampsia	Chronic Nephritis	Albumen with Relative Increase in Blood Pressure	Sudden Increase in Weight	Deaths
1916	404	3	2	1	0	0	0	0
1917	518	5	1	2	0	0	0	1
1918	658	6	2	3	1	0	0	2
1919	618	5	2	1	1	1	0	0
1920	553	7	2	3	2	0	0	1
1921	589	13	1	0	2	6	4	0
1922	499	8	0	1	1	3	3	0
1923	510	14	2	1	0	4	5	0
1924	517	15	3	0	2	6	5	0
1925	519	21	3	0	3	5	10	0
1926	491	19	3	1	2	4	9	1
1927	464	17	0	1	1	7	8	0
1928	446	24	3	1	2	5	13	0
1929	410	26	2	1	2	5	16	1
1930	443	24	3	0	3	5	14	1
1931	410	15	2	0	1	3	9	0
	8054	222	32	15	25	54	96	7

then done. The patient is instructed as to the necessity of appearing regularly at the clinic and carrying out the hygienic rules according to the printed form. Visits are made every two weeks.

The early symptoms and findings that we are continually on the lookout for are:

Sudden Increase in Weight.—We allow a normal pregnant woman to gain from three to four pounds a month. When this limit is passed, corrective treatment is immediately instituted. The allowance of a 2,500 calorie diet is cut down to 1,200. Though ambulatory, the patient must report to the clinic at least every other day, bringing samples of urine with her. If in spite of this correction the weight still climbs, we then investigate the fluid intake and compare it with the output. Thus, we detect any case of overweight² due to faulty water metabolism, and the amount of fluid intake is cut down to 1,500 cubic centimeters in twenty-four hours. We are able by this method to hold the weight down to normal in most cases. Those that do not respond to this regimen are sent into the hospital for observation and further treatment. We have had the opportunity of viewing certain cases of overweight wherein no corrective treatment was instituted. They showed within a short time that the remaining symptom syndrome of increase in blood pressure, followed by the appearance of albumen and certain suggestive symptoms, were natural sequences.

BLOOD PRESSURE

Using the desk-model mercury baumometer, we find that the normal average reading runs between 100 to 125 systolic and 50 to 80 diastolic. For instance, a patient's reading at repeated visits averages 110/60 and for no explained reason jumps to 125 to 130/80. We term this a relative increase in blood pressure and expect shortly to find a very slight trace of albumen in the urine. Now with the detection of her increase in blood pressure, or both of the two clinical syndromes, we make a tentative diagnosis of impending toxemia long be-

fore the toxemia has necessarily manifested itself. Only by work of this nature can we conscientiously take advantage of prophylaxis in the management and treatment of toxemias. We justify ourselves in taking this stand as a result of our clinical experience.

TREATMENT

Treatment for toxemia of pregnancy depends upon prevention, and prevention depends on early diagnosis. The treatment is purely empiric, bearing in mind that mild cases may be the forerunners of grave toxemias. By empiric treatment we mean rest in bed at home or in the hospital, restricted diet, fruit juices, cooked vegetables, alkaline waters, and milk. A mild saline laxative, milk of magnesia, or citrate of magnesia is given daily. The intake and output are measured as well as possible. The patient is assured and made happy, as the mental attitude and psychologic effect must be taken into consideration.

In spite of conservative treatment, if the case progressively gets worse we begin to make arrangements to terminate the pregnancy. The methods used depend entirely upon the case *per se*. We feel that in the treatment of toxemias the patient is to be considered first and do not try to treat by classification. We have observed that any toxemia of the latter half of pregnancy that does not respond to good conservative treatment is gradually producing certain pathologic changes.³ The longer the case is protracted the more tissue is damaged. These changes affect every organ in the body, especially the kidneys, liver, and brain, and in some measure are a menace to future health.⁴ To obviate permanent damage, the pregnancy is terminated, if necessary, by operative procedures.

CONCLUSIONS

In conclusion, our study shows that:

1. Prenatal care does not prevent toxemia.
2. Prenatal care diminishes the number of cases of eclampsia and toxic deaths.

TABLE 4.—*Treatment in Two Hundred and Twenty-Two Cases of Toxemia of Pregnancy*

Delivered Spontaneously Number Patients	Operative Deliveries Total Number of Patients
158	17 Caesarian Sections
	35 Forceps
	4 Voorhies Bag
	8 Version and Breech Extractions
	64

3. More toxemia patients are recognized earlier by the study of weight and relative blood pressure increase.

4. Patients treated conservatively, with no response, are terminated by operative measures to avoid permanent tissue damage.

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DISCUSSION

E. M. LAZARD, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Breitstein's review of the toxemias of pregnancy occurring in the obstetric department of Mount Zion Hospital again emphasizes the importance of proper prenatal care in preventing the more serious forms of toxemia in the latter half of pregnancy. While we all agree with his first conclusions that prenatal care does not always prevent toxemia, I would emphasize his second and fourth conclusions, *viz.*, that prenatal care *does* diminish the number of cases of eclampsia and toxic deaths and that patients treated conservatively, with no response, should have their pregnancies terminated to avoid permanent tissue damage.

In a recent review of the first thousand obstetric patients delivered at the Cedars of Lebanon Hospital, Los Angeles, where all cases are under prenatal supervision, I reported two cases of eclampsia, practically the same incidence, 0.2 per cent of eclampsia, as is reported by Doctor Breitstein, *viz.*, fifteen cases in 8,054 deliveries; this contrasted with a two per cent incidence of eclampsia which we have at the Los Angeles General Hospital, where the material is largely unsupervised prenatally.

I also agree with the author in the conclusion that toxemias are recognized earlier by the study of weight and relative blood pressure increase, but would lay more stress on prophylactic measures in the attempt to prevent the development of the toxemias.

Of importance in keeping the pregnant woman well, I believe in establishing a proper dietary regimen, with search for and removal, if possible, of all local foci of infection and protection against the occurrence of acute infections which might act as exciting causes of a toxemia.

Such studies as this are of greatest importance in keeping before the profession the necessity of constant care and supervision of these patients, if we are to succeed in reducing the incidence of this most serious complication of a perfectly normal function to an irreducible minimum.

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MARGARET SCHULZE, M. D. (University of California Hospital, San Francisco).—Doctor Breitstein's paper is most valuable and timely and serves to emphasize

a number of most important facts. So long as the etiology of pregnancy toxemia remains obscure, our treatment must necessarily remain empiric. As this careful study so convincingly shows, we cannot hope to eliminate toxemias entirely by prenatal care. However, early diagnosis followed by conservative treatment with prompt termination of the pregnancy if the patient does not respond to such treatment, will do much to prevent development of the toxemia to a degree where it becomes a menace to the immediate life or the future health of the patient. Our experience in the University of California obstetric service fully confirms the experience of both Doctor Breitstein and Doctor Bernstein in this respect. Several years ago I made a study of the cases of eclampsia occurring in the University of California obstetric service and in the San Francisco Hospital obstetric service. I found thirty cases of eclampsia in the former service in a series of six thousand obstetric cases, with a mortality of one, or 3.3 per cent. This service had had a well-regulated prenatal clinic for many years. In 2,700 cases in the San Francisco Hospital there were twenty eclampsias, with a mortality of five, or 2.5 per cent, although the treatment on the two services was comparable. At that time the prenatal service at the San Francisco Hospital was in its infancy and many cases were admitted to the hospital directly as emergency cases. In recent years with the organization of a well-controlled prenatal clinic for this service also, we have noticed a marked decrease in the severe type of toxemia, although we have constantly in the hospital a number of women under treatment for toxemia.

Doctor Breitstein's first statement, that any pregnant woman, regardless of age or parity, may develop a toxemia, cannot be emphasized too much. Not infrequently a woman will feel that because she has passed through one or a number of pregnancies successfully prenatal care is no longer so essential and may find it inconvenient to report to the doctor as frequently as requested. It is only by careful education of our patients in this respect and careful control of the whole period of pregnancy that we may make childbearing as safe as it should be.

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JOHN A. SPERRY, M. D. (490 Post Street, San Francisco).—The large number of cases and the excellent manner in which they are reviewed makes Doctor Breitstein's contribution interesting and valuable. However, it should be borne in mind that these are clinic patients, who for the most part are overburdened with household cares entailing in many instances hard physical work. Also that they are for the most part of a comparatively low intellectual development. For these reasons the careful instructions given them in the prenatal clinic are often more or less disregarded or they are, for obvious reasons, unable to carry them out. It is quite plain that the mother of four or five children, who is trying to feed, clothe, and educate them on the small wages her husband brings in, cannot take care of herself as directed. These people have to work hard throughout the whole term of pregnancy, and resume their household routine a few days after returning home from the hospital.

It is true that our fine horses and cattle are given more consideration than the majority of our women.

It would be interesting to make a comparative study of a large number of private patients and an equal number of clinic patients. Perhaps to some extent the overwork of the poorer patient would be counterbalanced by the bridge-playing, cigarette-smoking, cocktail-drinking tendencies of the more well-to-do, with their attendant late hours and nervous strain. The members of this class, although they exist, are, fortunately, not numerous.

I am also often impressed with either the disregard or the misunderstanding of instructions, and it is my experience that prenatal care and precautions have to be gone over and emphasized with each visit.

It is remarkable how quickly blood pressure will go up after some unusual exertion. When such a sudden rise occurs I ask patients what they have been doing,

and frequently find that they have just finished household moving, preparing a better place for the expected baby, or have indulged in some other strenuous physical activity.

I agree that when toxemias show no response to treatment and are getting to a dangerous stage the pregnancy should be interrupted. However, I believe that great care should be exercised in choosing the method of interruption which carries the least operative shock. These patients are already in a serious condition and should not have to bear the added strain of a major surgical procedure if simple induction of labor is feasible, and comparatively easy delivery can be effected through the birth canal.

THE LURE OF MEDICAL HISTORY*

JOHANN SIGISMUND ELSHOLTZ
(1623-1688)†

CLYSMATICA NOVA (1665): ELSHOLTZ' NEGLECTED WORK ON INTRAVENOUS INJECTION

By ETHEL GLADSTONE
San Francisco

III‡

CHAPTER III. *Reason for the Name; Apparatus; Division.*—But now, before I proceed to recount experiments individually, it seems suitable to tell whatever there is to be said in general about this new art.

I myself feel this way about the reason for the name: Since this operation consists of injection through a syringe, it is perhaps not improperly called the *Art of the Enema*, or the *New Clyster*, unless someone objects to these familiar words. For it is common knowledge that clysters are injected in the anus and the ears, and in the uterus, the bladder, and the penis, and also in the sinuses and fistulas. All of these uses, however, pertain to the old type of clyster; injections which are made in the arteries or veins of the body are due to the industry of more modern scientists.

Moreover, in every art certain instruments are necessary. As the proverb goes, "Good tools make a good workman." In this art, too, exact apparatus is required. For working with animals there must be first a table, knife, lancet, syringe, tubes, and the liquid to be injected; also a sponge, cold water, bandages, and needle and thread. Fewer instruments suffice in working with men; merely a lancet, syringe, tubes, liquid, and bandages. There is very little necessity for the other instruments, and absolutely none for some of them. The illustrations should be consulted. I must mention here, too, that the bladders of animals, with which we generally inject alvine enemas, are not so well suited to this operation;

it can be done more quickly by using a small metal syringe.

Furthermore, the new art brings new distinctions. If you will consider its purpose, you will see that it can be divided into two parts: First, research, which is concerned solely with acquiring knowledge and may be accomplished in experiments with animals; and second, salubrity, in which, obviously, the work must be done to man in order to perform any cures.

I also considered the different operations there can be in *infusion* when some liquid is merely injected in a man or in an animal; and the operations necessary in transfusion when blood is transfused either from one animal to another, or from an animal to a man, or from one man to another. This type of transfusion can be called *simple*, in consideration of the fact that there is also *reciprocal* transfusion, an example of which will be given in Chapter X.

111

Chapter IV. *Experiments Made by the Author, as Much on Animals as on Man.*—Since we have made clear the primary distinctions of this art, the next thing will be to give examples of each in turn, beginning with those experiments we ourselves have made to augment medical knowledge. In the following chapters we shall include whatever is of importance in foreign experiments, or histories, as Galen distinctly called his book *De opt. sect. ad Thrassibul, ch. XIV.*

First, I bound a large dog to a table by the legs, which are most suitable for this sort of surgery. Cutting away the skin on the inside of his right leg, I exposed the crural vein of that place and made an opening in it with a lancet. I had previously ordered an assistant to compress the vein by inserting his finger on the other side of the incision in order to check the flow of blood. Then I drew an ounce of water into a silver syringe and, turning its point toward the abdomen, as the illustration opposite shows, I injected the water through the opening. I was decidedly happy to accomplish this as successfully as I did.

The point of the syringe (as I noticed in this experiment) should be straight, not curved; the curve hinders the injection instead of aiding it.

Finally, I placed a small round piece of fungus over the wound and sewed the skin together with thread, and then put the dog back on the ground. He licked the wound for about an hour, then got up and ran off as if nothing had happened to him.

In this manner, I became more certain that this type of injection is possible not only in a corpse, as I had proved in the arm of a suffocated woman, but also in a living being. I tried the same experiment on a second dog, but with this difference: in place of pure water, I injected some good Spanish wine. What happened then, you ask? I noticed absolutely no signs of drunkenness. But perhaps you did not infuse a quantity large enough to cause drunkenness? I, myself, also believe that this is true; and so I have no doubt of the result if more wine had been injected.

I was not satisfied with these experiments, but gave a third dog an ounce of liquid *extractum*

*A Twenty-five Years Ago column, made up of excerpts from the official journal of the California Medical Association of twenty-five years ago, is printed in each issue of California and Western Medicine. The column is one of the regular features of the Miscellany Department of California and Western Medicine, and its page number will be found on the front cover index.

† From the University of California Medical School Library.

‡ Part I of this translation of the *Clysmatica Nova* of Esholtz was printed in CALIFORNIA AND WESTERN MEDICINE, June, 1933, page 432.



Fig. 3.—Illustration from Elsholtz' *Clysmatica* (1667), showing his method of intravenous injection of drugs into dogs. (From a copy in the University of California Medical School Library.)

Explanation of the letters in Figure I, which depicts simple infusion in animals: *a*, crural vein, exposed in dog; *b*, syringe filled with medicated liquid, and inserted in opened vein; *c*, right hand of surgeon, holding piston; *d*, left hand of surgeon, pushing plunger; *e*, hand of attendant, compressing vein with finger.

opii at 10 a. m. This dog was very strong and ferocious, and all through the infusion made an uproar that nearly exhausted us; but as soon as the operation was over he became astonishingly tame. During the next hour his eyes grew dull and half-closed, and he became so sleepy that he did not arouse himself even when he was struck hard on the nape of the neck with a finger. It is true that as often as I touched his injured foot he would raise his head a little and then immediately lie back as if overcome by sleep. About noon I noticed that his tongue was hanging out, and pressed it with my finger. He did not move in response to this pressure, and so I pricked it with a needle. Since he did not notice this, I thrust the needle in deeply; then he raised his head a little, but almost instantly let it fall back.

Convinced in this manner of his incipient stupor, I began to prick his uninjured hind foot, and observed that the dog made no movement when the needle was thrust through the skin in the usual way; but when it was continually plunged up to

the head into the flesh itself, he gave signs of feeling. At about one o'clock in the afternoon he got up, turned around in a circle several times, and then fell down and went to sleep again, like a drunkard. He also refused bread and a pan of water when it was put to his mouth, so that he seemed to have hydrophobia.

Then, since I opportunely recollect that he was a hunting dog, we aroused him to the chase by fictitious shouting. He struggled to come to himself and get up; but the attempt was useless because of his stupor and the condition of his legs, which were as if paralyzed. So he slept the rest of that day and all the next night and day before he came to himself and was able to stand steadily on his feet. Nevertheless, he finally became perfectly well.

At 10 o'clock in the morning, I injected in a fourth dog an ounce of *spiritus vitæ aureus*, a customary cathartic in the laboratory of our court, giving him as much of it as is sufficient for a man. For several hours he seemed to feel badly, and wandered about here and there like those who have drunk too much of a medicine, so that it disturbs them without accomplishing its purpose. But finally at noon, after about the tenth bowel movement, he had a sufficiently satisfactory one. I do not doubt that this slow and weak movement was caused by the insufficiency of the dose. And although some may surmise that purges do not have the same effect on dogs as on men, nevertheless I deduce from this imperfect operation that it is a possibility.

About two o'clock in the afternoon, I injected in a fifth dog an ounce of *vinum emeticum*, prepared from *Crocus metallorum*. He commenced breathing very loudly, as people do who are lying down; and, panting and driveling, began to vomit two hours after the infusion. Meanwhile he was very restless, and crawled about from one corner to another. Part of the stuff he brought up was thin, part sticky and full of phlegm; and some of this he swallowed again after vomiting it, as dogs do. The following night he lay as if he were asleep, and in the morning, contrary to my intention, he was found dead.

And so, besides the vomiting, this drug caused his death. I conjectured that the reason was that, in order to increase the strength of the *Crocus metallorum*, I had given about sixteen grains of it, although eight are sufficient for a man; and also, besides the amount of the infusion, I had not filtered the drug through blotting paper. So it happened that not only the wine, filled with the property of antimony, but the saffron powder itself in substance, as the laymen say, entered the heart lethally. But if this *vinum emeticum* is given in a moderate dose after it has been filtered, there is no reason at all to fear such a violent effect.

Engaged in these rudimentary experiments, I had paid no attention to the amounts of doses up to this time. Rather, I had sought the most complete proof whether, if separate drugs were injected separately through a vein, they would each still have their individual accustomed results; they did, absolutely. But granting that cathartics work



Fig. 4.—Illustration from Elsholtz' *Clysmatica* (1667), showing his method of intravenous injection of drugs into humans. (From a copy in the University of California Medical School Library.)

Explanation of the letters in Figure II, in which simple infusion in a man is demonstrated. In the leg: *a*, inner branch of crural vein, opened by lancet; *b*, syringe filled and inserted in vein; *c*, left hand of surgeon, compressing skin; *d*, right hand of surgeon, holding piston; *e*, hand of assistant, pushing plunger; *f*, ligature removed after dissection. In arm: *g*, median opened; *h*, syringe inserted; *i*, left hand of surgeon; *k*, right hand of surgeon; *l*, hand of assistant.

more weakly than is right, and that emetics act excessively, nevertheless the quantities of doses, of which time will bring accurate knowledge, must be taken into account.

And last, I boiled *arsenicum album* in water and injected in a sixth dog an ounce, or a little more, of this distillation. After a quarter of an hour he began to snort at intervals, with rumblings in the abdomen, to foam at the mouth, to pass a great deal of excrement from the bowels and the bladder, and to turn violently from one side to the other although he was tied firmly by all four feet. After that he commenced snorting more frequently and heavily, rolling his eyes, and going through all the symptoms which customarily follow the drinking of arsenic. After two hours had passed he closed his eyes and wailed loudly through his open mouth. A little later, before the beginning of the third hour, he became silent and died.

Moreover, if poison were given through the mouth and an antidote through a vein, or, on

the contrary, an antidote through the mouth and poison through a vein, the result of this struggle between the two would be apparent.

Progressing from my experiments with dogs to work with men, I began to ask among the more intelligent sick people I encountered if they would undergo infusion. And very recently three privates from the bodyguard of our most Serene Elector permitted it.

The first suffered from an old ulcer on his left leg which, however, was now beginning to heal. I gave him some good advice, telling him that if he wished to be healed quickly it could be by opening the inner branch of the crural vein near the ulcer and injecting a very little of a certain *liquor balsamicus* through a fine tube; and when, in hope of becoming well, he readily consented, I ordered Andrea Horch to open the vein. Horch is head surgeon of the said legion, whom I taught this science so that he could assist me more in examining the troops and so lighten the labor.

I inserted in the opened vein a small syringe filled with *aqua plantaginis*; compressing the skin above the opening, I plunged the needle in without obstacle or injury; how this was done will be clear to those who look at the following illustration.* After a bandage was put on the wound, I asked the patient if the tube entering his leg had caused him great pain. "Almost none," he replied. And so he was dismissed.

The second guardsman, because of a fever, asked to have his median vein opened. I asked him to allow an anti-fever serum to be injected after a sufficient quantity of blood had been let. He agreed; and we skillfully injected a spoonful of distilled *aqua cardubenedicti* before we finished.

The third, accustomed from birth to perfect health, had never before had a vein opened. But in later years he had got a scorbutic impurity in his veins from improper food, and so felt a heaviness in his limbs. Therefore I advised a phlebotomy, first cautioning the man not to look at his arm, so he would not be frightened. "All right," he said, "I'll keep my head turned the other way." In this way, after enough blood had been let, we injected some *aqua cochleariae* without his knowledge.

My idea was confirmed by these three experiments, and I became even more certain that this new art of the clyster is useful not only in working with dogs and other animals, but also with the human body itself. Indeed, the work can be carried out far more easily with human beings. For in dogs the skin must first be cut open and the veins freed from the membranes, which is a tedious task; and further, we are frequently disturbed during the operation by the animal's tossing about, although he is bound. In man, when the limbs are bound, the veins swell, and so lend themselves to observation. Besides, a man of sound mind, once he has given his consent, does not resist the person working on him. Moreover, the veins in an adult man are more exposed than those in a dog, and so liquid can be injected in them more easily.

(To be continued)

* Note.—See Fig. 4 (which is Fig. II of the folio).

CLINICAL NOTES AND CASE REPORTS

DUODENAL STASIS

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THIS condition cannot be considered as a true clinical entity any more than gastric stasis can be considered as such. It is often mistaken for numerous varieties of abdominal pathology. There are several grades encountered from the very mild transient type of functional origin to the almost complete obstruction due to organic diseases.

The transverse duodenum is the part that is usually occluded. It crosses the aorta, vena cava, and the vertebral column at the level of the second and third lumbar segments. It ascends as far as the inferior surface of the pancreas. At the level of the first or second lumbar vertebra, this ascending portion bends abruptly forward, forming the duodenojejunal flexure, and then passes into the jejunum. This terminal portion is fixed by the muscle of Treitz, which is attached above to the strong connective tissue around the celiac artery as well as to the left crus of the diaphragm, thereby making this portion firmly fixed.

REPORT OF CASE

Mrs. R. J., age thirty-six, was admitted to hospital January 7, 1932. She complained of feeling nauseated, had a gaseous indigestion and had been vomiting for the past five weeks. She had a dull aching type of pain over the entire abdomen, but it was more marked in the right upper quadrant. She said she felt a fullness in this quadrant, always noted a rumbling of gas and felt better when lying on her abdomen. She had been advised to have an exploratory laparotomy.

In the review of her past history she stated that she had had a gaseous indigestion for the past fourteen to fifteen years. Thirteen years ago the appendix was removed. This did not relieve her condition except when she was convalescing. Otherwise the past history is of no moment.

Physical Examination.—Slender, asthenic habitus, abdominal muscles flaccid. Moderate tenderness over the entire abdomen, but more marked in the right upper portion. The intestines were distended with gas. The liver was not enlarged. The heart and lungs were normal.

Laboratory Findings.—Blood: Red blood cells, 4,329,000; hemoglobin, 70 per cent; white blood cells, 9,400; with normal numbers of various types. Blood sugar, 90.

Urine: Negative for sugar and albumen.

Gastric analysis: There was a moderate amount of mucus, slightly bile-tinged. The free HCl and combined acids within normal limits.

Duodenal drainage: Excessive amounts of mucus, food remains were found of meal eaten eighteen hours previously. Bile contained a few pus cells and slightly increased amount of mucus.

X-ray report: This examination revealed a ptotic stomach. The pylorus was retracted to the right side. There were no signs of a peptic ulcer.

The filling of the first portion of the duodenum was considerably delayed, but remained filled throughout the examination. Peristalsis was very inactive. The first, second, and third portions of the duodenum were moderately dilated.

A diagnosis of duodenal stasis was made in view of the history of a gaseous indigestion persisting for several years; the finding of food remains in the duo-

denum after eighteen hours, and the x-ray findings noted above.

Treatment consisted of rest in bed, knee-chest position q. 4 h, a high caloric diet with a minimum amount of roughage fed six times per day, exercises to give tone to the abdominal muscles, and sodium cacodylate, grain $\frac{1}{4}$, three times a day.

She improved very satisfactorily on this regimen and after one month was permitted to be out of bed. At this time she was instructed to wear an abdominal support, but also to continue with her abdominal exercises. Her weight has continued to increase and she has been free from her intestinal symptoms.

COMMENT

Glenard,¹ in 1889, expressed the opinion that a ptosed stomach caused dilatation of the duodenum. This observation was also verified by Adams,² who states:

The obvious difficulty in accepting chronic duodenal ileus as a clinical entity is the fact that compression of the duodenum by the mesenteric vessels is likely to be a congenital defect. The symptoms are rarely manifest before the age of twenty. The cumulative effects of viceroptosis may be claimed as the determining factor in the causation of the symptoms. If this be entirely so, x-ray should demonstrate a viceroptosis in nearly all cases, but only about 25 per cent of them exhibit this condition. While on the other hand, a gastrophtosis was noted in 75 per cent of the cases.

Wilkie,³ in describing the pathological anatomy, states that the salient feature of the condition is the dilatation of the first three parts of the duodenum up to the crossing of the mesenteric vessels. The dilatation in the chronic type may be so pronounced as to resemble a second stomach. The duodenal wall is hypertrophied. The pylorus is usually dilated, although this is not invariable. The clinical picture is modified when the pylorus retains its tonicity. If the duodenum is distended at the time of the examination and a finger be passed behind the root of the mesentery and the latter lifted forward, the duodenal content will immediately pass on and fill up the duodenojejunal loop.

In the less severe types of cases, as pointed out by Adams,² in which a tentative diagnosis of gall-bladder disease is made and when the patient is opened no gall-bladder pathology is found, the pyloric vein is noted to be horizontal instead of perpendicular, the first part of the duodenum is pulled down to a vertical position and the entire duodenum is pulled around the head of the pancreas, displacing the latter forward.

The majority of these sufferers are emaciated, of asthenic habitus, and many times have neurasthenic tendencies. One of the prime requisites is to put weight on them. If they are unable to retain food, jejunal feeding may be resorted to. Bockus⁴ advises passing the tube and leaving it in position for three weeks if necessary, especially in the severe types.

The diet should be a high caloric, high vitamin, smooth diet, taken in small quantities at frequent intervals. The calories should be figured so as to insure weight gain.

When the patient is in bed instructions should be given to lie on the abdomen or on the sides as much as possible. After becoming ambulatory an abdominal support should be worn until an appropriate weight gain is attained. All patients should be instructed to take postural exercises. The knee-chest position and the Goldthwaite diaphragmatic exercises prove beneficial in developing tone to the muscles of the abdominal wall which in turn helps to alleviate the visceroptosis.

Massage, abdominal and general, electrotherapy and hydrotherapy, and tonics, all contribute to the general physical improvement.

Duodenojejunostomy has been performed with very satisfactory results. It is, without doubt, the operation of choice. If a duodenal ulcer is associated with a duodenal occlusion, Wilkie and others recommend a combined gastro-enterostomy and duodenojejunostomy.

All patients suffering from a functional ileus should have the advantage of an adequate medical regimen before surgery is attempted.

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CARCINOID APPENDIX

By WALTER J. SULLIVAN, M. D.
Los Angeles

INFLAMMATIONS of the appendix are common. From a clinical standpoint they are divided into the acute and chronic types. Sections are easy to diagnose and, as a rule, present no unusual features. Tumors of the appendix are rare. They may be benign or malignant, primary or secondary. Benign tumors are unusual. Deaver, in his extensive appendiceal work, demonstrated fibroleiomyoma only on one or two occasions.¹ MacCarthy of the Mayo Clinic showed approximately that one in 225 appendices removed is cancerous at the tip. The clinical course of a malignancy of the appendix is that of a chronic interstitial appendicitis. It can only be diagnosed by appendectomy and section. Of the two types of epithelial tumors arising in the appendix, we find: (1) True carcinomata; and (2) a nonmalignant tumor which presents on section, according to H. Reid and H. Smith,² "an endothelial proliferation resulting from inflammation of displaced epithelial cells. The usual round-cell infiltration is absent and the connective tissue retains its acidophilic properties." The term "carcinoid" has been applied to this second type.

Regarding the above pathologic diagnosis, the following case history of an appendix recently removed is presented.

REPORT OF CASE

History.—The patient, a female, age fifty-two, white and married, the mother of two grown children, with a negative pelvic history, was admitted to the Queen of the Angels Hospital on May 17, 1932. She complained of a bearing-down pain in the lower right abdominal region, extending over to her bladder. This pain started early Sunday morning, May 15, 1932, and persisted all day. During the day she passed a great deal of gas. She was not nauseated nor did she vomit. Sunday afternoon she took an enema without relief of pain. Sunday night the pain extended over toward her right groin. The pain persisted all day Monday, without any other symptoms and no elevation of temperature. Tuesday morning she vomited for the first time, after a dose of Epsom salts. A physician was called and the examination revealed slight pain, some rigidity, and a moderate degree of tenderness over the right iliac fossa. Her temperature, pulse, and respiration were normal. A diagnosis of an acute appendicitis was made and the patient was removed to the Queen of the Angels Hospital. Her blood count at that time showed a 99 per cent hemoglobin. A color index of 0.86 erythrocytes, 5,664,000 which appeared normal. Her leukocytes were 11,500 with small lymphocytes of 18 per cent, transitional 2 per cent, and polymorphonuclears of 80 per cent. An internal examination demonstrated the pelvis to be negative. An examination of the cervix with the speculum showed a slight enlargement, redness and protrusion of the mucous membrane into the cervical canal. A flat K-U-B picture was negative, as was the urine, blood pressure, and Wassermann.

Operation.—A low spinal anesthetic was administered, and a mid-line incision extending from the pubic bone to the umbilicus was employed. A mass the size of a hen's egg was palpated in the ileocecal region. On gentle separation of the terminal ileum from the cecum, a gelatinous mass resembling mucus, about two drams in amount, was observed protruding from the side of the appendix. A small hole in the side of a rather broadened appendix, which resembled a diverticulum, permitted the escape of more of the same material. The appendix was removed. Pagenstecher linen was employed throughout. There was no thickening of the appendiceal base. An inspection of the abdomen was negative, with the exception of the gallbladder, which was enlarged and contained several stones. The abdomen was closed in the usual manner without drainage. A small section of the cervix was removed and sent to the laboratory for diagnostic purposes. The report from the cervical section was negative. The patient made an uneventful recovery and left the hospital on the eighth day.

Pathologic Report.—Paraffin sections were made from four blocks of the appendix. Section from one block showed the epithelium to be thrown up into papillary or serrated projections. Each one has a small central core with several layers of large epithelial cells, some having hyperchromatic nuclei. A number of mitotic figures are seen. There is no invasion of the fibrous tissue beneath. There is some round-cell infiltration in the submucosa. In the muscle wall there are longitudinal clear spaces, showing a fibrinous-like network in which are seen round cells and eosinophils. The serous surface is thickened and fatty, and shows scattered round cells.

Another section shows a hyperplasia of the superficial epithelium without the papillary appearance. There are irregular glands with epithelial cells like those in the first section. In places there are masses of epithelial cells beneath the surface. Each mass has an irregular lumen. These masses are only a short distance beneath the surface and may be due to tangential section. In the muscle and fibrous tissue there is a marked round cell and eosinophilic infiltration. . . . Section of a third block gives a picture like that of the first block. . . . Sections from a fourth block show

large areas having a fibrilla structure in the meshes of which is basic staining, colloid-like material. There are thick bands of fibrous tissue between the colloid areas and the trabeculae dividing up the area. The fibrous tissue shows round cell and eosinophilic infiltration and scattered polymorphonuclear leukocytes.

The appearance is that of a colloid carcinoma which in the appendix is very benign. They are called carcinoids.

Diagnosis: Carcinoid of the appendix.

COMMENT

According to E. S. J. King,³ "epithelial tumors arising in the appendix are of two kinds: (1) true carcinomata, rare in occurrence; (2) nonmalignant carcinoids, more common." Carcinoid tumors occur usually in young people and are observed in about 0.4 per cent of all appendiceal lesions in King's experience. Carcinoid tumors may occur in any part of the alimentary canal from the cardia to the anus, but are usually noted in the region of the appendix, in which location the following types have been observed:

1. A hard, circumscribed nodule at the tip of the appendix which measures up to 18 millimeters in diameter and when sectioned has a uniform yellow color.
2. A nodule obliterating the lumen of the tube.
3. Rare diffuse type resulting from invasion of the muscular layer by the tumor cells.
4. The multiple tumor masses.

The most likely theory concerning the origin of these tumors is that they are (1) entodermal, and (2) ectodermal. The structure of the typical tumor with its spheroidal argentaffin cells, that is, cells containing granules capable of reducing silver preparations, closely resembling the structure of many brain tumors, gliomata of the retina, neurocytoma of the adrenal and other neoplasms of the nervous tissue origin. On this account King believes that these carcinoid tumors arise from nervous cells most likely derived from the sympathetic system.

H. Reid and H. Smith⁴ state that the condition as a rule is benign but several cases of metastasis to the liver, the peritoneum, and the lymph nodes are on record. The growth as a rule is confined to the mucous and the submucous layers, with a tendency to infiltrate into the muscularis. Various types of cells include the spheroid (the most common type), cuboidal, cylindrical, endothelial, and mixed types. Colloid degeneration has also been noted.

Of primary interest in this case is the diagnosis of a carcinoid appendix which is considered a non-malignant epithelial tumor. According to H. Reid there are, nevertheless, on record several cases of metastasis to the liver, peritoneum, and the lymph nodes.⁵

Of added interest, and a factor which should not be overlooked on account of subsequent possible pathology, is the gelatinous material which was observed protruding from the side of the ruptured appendix. No report was returned on this

material although it was sent to the laboratory with the appendix for diagnosis. It is a well-known fact that leakage from a mucocele of the appendix may spread throughout the peritoneal cavity and cause death from mechanical obstruction. According to Frank, in his book on gynecological pathology, he states: "In the majority of cases epithelial cells are contained in the pseudomucinous mass. These cells continue to secrete, form gland complexes and cysts. No invasive tendency is shown, the organ being wrapped (but not penetrated) in a jelly-like envelope. Because of the physical properties, the peritoneum cannot readily absorb the gelatinous substance which closes the subperitoneal lymphatics. A foreign body peritonitis results. (Granulation tissue, giant cell and connective tissue production, endothelial proliferation.) The cellular elements produced by the peritoneum penetrate the inert colloid and form septa and encapsulated masses. If the source of supply is not cut off by removal of the primary focus, or if secreting cells are contained in the jell, incredibly large amounts of pseudomucin may be produced. Biggs removed 350 pounds of this material in twelve operations in a period of nine years before the patient died at seventy-five. A few cures are reported after repeated operation; seventeen recoveries in forty cases."

V. Lieblein,⁶ writing of rupture of appendiceal mucocele, refers to thirty-five surgically treated cases of pseudomyxoma peritonei of appendiceal origin in which nine deaths occurred.

Since the operation of this patient three months ago, she has complained of a fullness and soreness to the right of her bladder. The patient will be carefully watched and reported on, if any unusual symptoms occur.

209 Security Bank Building.

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FOREIGN BODY IN THE ISCHIORECTAL SPACE

By DAVID N. YAKER, M. D.
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MANY cases have been reported in which chicken bones, fish bones, seeds, and similar small objects have been recovered from diseased crypts of Morgagni; and that upon removal of these there has been almost immediate relief from symptoms. At times, fish bones, or rather small foreign bodies, have penetrated the rectal mucosa and entered the ischiorectal spaces, where an in-

flammatory process was set up and an abscess resulted.

I wish to report a rather unusual case which just recently came under my observation.

REPORT OF CASE

On August 20, 1931, a male, age fifty-one, presented himself at the rectal clinic of the Cedars of Lebanon Hospital complaining of severe pain in the rectum, of ten days' duration. The patient thought that the pain came on rather suddenly when he had strained at stool. He stated that the pain had been more or less constant during this period, and was aggravated by bowel movement. He could get little or no relief from heat locally, and no relief from the use of suppositories.

Examination revealed a swelling, the size of an orange, in the left ischiorectal region. This was hard and very painful to the touch. There was no fluctuation present. Rectal examination aided in the diagnosis of ischiorectal abscess. The pulse and temperature were normal.

The next day, under gas-oxygen-ether anesthesia, the man was operated on. An incision was made into the hard indurated area. Very little pus was found; but on investigation a large spicule of chicken bone, one and one-quarter inches long and one-quarter inch wide, with very pointed ends, was found lying in the abscess. A large probe was passed into the wound, and this very easily entered the rectum through one of the crypts of Morgagni. The inflamed area was laid wide open and much of the indurated tissue excised. Further examination of the rectum revealed four deep crypts, which were also excised. The patient made a very uneventful recovery, being carefully watched so that the wound would heal from the bottom out.

The probability in this case, and the interesting point is that the bone, large as it was and pointed at its ends, passed through the entire gastro-intestinal tract without doing any damage, only to lodge in one of the crypts and then invade the ischiorectal space. It also emphasizes the part played by these crypts in the formation of abscesses and fistulas, as brought out in a recent paper by Buie of the Mayo Clinic and in a more recent paper by McKenney of Buffalo. It might be added that the patient did not recall the exact time of swallowing the bone.

Roosevelt Building, 727 West Seventh Street.

Ground Squirrels Carry Plague.—Plague is primarily a disease of rodents, and secondarily and accidentally a disease of man. Man's safety from the disease lies in the exclusion of the rodent and his parasites. This is the basis of all preventive and eradication work. If man can live in rodent-free surroundings he need have no fear of plague, because if there be no rodents there can be no rodent parasites, and for all practical purposes the flea may be considered as the common vector of the disease from rodent to rodent and from rodent to man. The eradication of bubonic plague, therefore, means the eradication of rodents.

In America we have two rodents which are comprehended in this problem, the rat and the ground squirrel, and apparently each plays a very distinct rôle in the propagation and perpetuation of the disease. The rat (*Mus norvegicus*, *M. ratus*, *M. alexandrinus*, and *M. musculus*) is distinctly domestic in its habits, and therefore comes in more or less intimate contact with man. It is also a frequenter of the great highways of the world, traveling long distances in ships and to a limited extent on trains. It is the producer of acute outbreaks, the conduit for the carriage of the virus from its perpetuating reservoir to the body of man. The ground squirrel (*Citellus beechyi*), on the contrary, is not a dweller in human habitations, does not travel except by short migrations, and is an almost negligible factor in the direct transfer of the disease to man. Its great function in the plague scheme is that of a rural reservoir from which from time to time the disease flows over to the suburban rat, thence

to his city cousin, and thence to man. This condition is not peculiar to America alone, since in China and Thibet the marmota (*Arctomys bobac*) and allied species perform a similar function.—*Weekly Bulletin, California Department of Public Health*.

Changes Proposed in Federal Food and Drugs Act.

A redraft of the Federal Food and Drugs Act has been completed and submitted to the Department of Justice for review. Provision is made for the expansion of the Act to include cosmetics and to regulate the advertising of foods, drugs, and cosmetics, but it does not propose the censorship of advertising in advance of its use. It does provide, however, that false advertising shall be classed as illegal and the responsibility for truthful advertising is placed squarely upon manufacturer and distributor.

Among other provisions in the proposed redraft of the Act are the following:

1. Authorization to the Secretary of Agriculture to establish food standards having the force and effect of law.
2. A fully informative label regarding the ingredients of a product.
3. Elimination of slack filling of containers and the use of deceptively shaped packages.
4. Inspection of food and drugs at point of origin.
5. Strengthening the present law relating to poisonous or other added deleterious ingredients which might render food harmful to health.
6. Declaration of the presence of dangerous drugs on the labels of products with possible restriction on the sale of dangerous drugs.
7. Strengthening the present law relative to the sale of drugs which bear false and fraudulent therapeutic claims.
8. Inclusion in the definition of drugs of mechanical devices intended for the treatment of disease.

These indicate the most important of the proposed changes in the Act. The general public has been invited by the Food and Drugs Administration of the United States Department of Agriculture to express its opinions relative to these proposed changes and to suggest other changes that might make the Food and Drugs Act more effective in the protection of the general public health.—*Weekly Bulletin, California Department of Public Health*.

Physician's Part in Public Health Activities.—The physician is the keynote that supports the whole structure of public health. Many other professions have definite and important places in the structure, but without the physician no adequate structure may be built up.

The physician, alone, would be helpless without the chemist, the engineer, the dentist, the nurse, and all those other important professions that supply scientific material that goes to build up our wonderful preventive health measures for the conservation of life.

Scientific discovery has given us abundance of health conservation material and the part played by the physician both in the discovery and in the practical working out of the same on the patients is reason enough why the physician should be placed in the highest positions of public health.

All physicians may not, in fact, do not always recognize public health as their most important work. Yet the reason is not difficult to find. The doctor's work is with the sick patient for the most part, and that this is so is not always the physician's wish, but seems necessary because of the public's fallacious idea that he wishes only to be consulted at such times.

Already this situation is changing, due to a better understanding by the public that the physician, by training, may render advice and service that will keep us well and also by an awakening on the part of the physician that preventive medicine is a field that should and can be covered by the general practitioner. (Dr. Charles Duncan, Secretary, Board of Health, State of New Hampshire.)—*Weekly Bulletin, California Department of Public Health*.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions of subjects for discussions invited.

MIGRAINE

EDWARD W. TWITCHELL, M. D. (909 Hyde Street, San Francisco).—*Symptoms.* The symptomatology of migraine in its several forms is so varied that anything like a full description of it would fill pages, but an enumeration and discussion of the most important symptoms can be done in moderate space. Christiansen declares migraine to be one of the nervous affections which physicians who are not neurologists most frequently fail to recognize; and this will be true particularly of the so-called *formes frustes*. A physician who for years had fortification spectra which were only occasionally followed by headache never knew what he was seeing until he came upon Airy's picture in the article in the Osler System on migraine; and Charcot's own experience was strikingly similar. It must be remembered that migraine is very common, and also that many patients take it for granted and never consult a physician concerning it.

There is a general feeling that migraine is confined chiefly to the educated classes; that, in fact, the having of migraine confers a sort of intellectual distinction. If, however, one looks over his case histories, he will find among the teachers, executives, clerks, and lawyers listed there an occasional farmer, craftsman, or laborer, so that a laborious outdoor life by no means confers immunity.

Any periodic headache, especially one which the patient gives a history of having had from an early age, must at once be suspected; although it is true that many characteristic migraines do not make their appearance until the thirties or later; and while women seem to be more often afflicted than men, this predominance among women is not very great.

Classically considered, migraine makes its appearance in the morning, when the patient, after a sound sleep, and having felt perfectly well the day before (and migraine patients have a way of being perfectly well at intervals), awakens with the sensations which he has long learned to interpret as forerunners of another attack. During the night he may have had unpleasant dreams. At first there may be merely a sense of sleepiness with yawning, a little heaviness in the head, a sense of weakness and exhaustion, and a lack of the usual mental alertness. Often there is irritability and restlessness. There may have been hints of some of these things for a day or two before. Shortly before the onset of the attack, there is often a sensation of chilliness. Less commonly there will be a feeling of oppression in the chest and symptoms referable to the digestive tract, such as salivation, fierce hunger or thirst, colics, or

diarrhea. In the ophthalmic variety, which by some is called the only true migraine, there may be hallucinations of sight and of smell, with certain parasthesias and more or less marked aphasia.

After the premonitory stage is passed, as a rule begins the headache, which varies greatly in severity. There are undoubtedly attacks in which the headache is almost if not entirely absent; despite Grasset, who declared there was no migraine without pain. This will be contradicted by anyone whose two successive attacks will be all but identical except for the fact that in one the headache is lacking. This headache is described variously as boring, pounding, pressing, tearing, and especially bursting. Some have declared that they could feel a separation of the sutures, and Salpart van Derviel, cited by Christiansen, declared that a spreading of the coronal suture at the height of the attack was noted in one case. As the intensity of pain increases, the slightest noise or light or movement becomes unbearable; hence the patient shuts himself up in a darkened room, excluding as far as possible all noise from the rest of the house. The pain is by no means exclusively a hemicrania in the sense of its being one-sided, although in many cases it may be very definitely so. It may settle in any part of the head or even in the lower jaw; but the frontal region is a preferred site.

Concomitantly with the pain, in most instances appear the digestive disturbances, namely, nausea and vomiting. This upset condition of the stomach is the reason for the popular name of sick headache. In many instances there is nothing more than nausea of greater or less degree, or it may go on the point of the vomiting, which characterizes so many cases, and this vomiting will be repeated until the patient is practically beside himself, as the retching and straining adds immeasurably to the headache. At this point may be noted also symptoms referable to the autonomic nervous system. In one case the face will be greatly flushed, while in another there may be a pallor. This has led some authors to describe a *migraine blanche* or *sympathicotonique*, and a *migraine rouge* or *angiomotorique*. Other symptoms referable to the sympathetic are miosis, exophthalmos, and tachycardia. Some cases are characterized by great mental depression, the so-called black migraine.

As the day wears on, the symptoms eventually begin to grow less intense until finally, toward evening, the patient drops off into a sleep, generally awakening to find that the headache has disappeared completely and that, barring some weakness and exhaustion, he is quite as well as ever. Oftentimes the attack ends with a nosebleed,

a profuse salivation, a diarrhea, a polyuria or a fainting. Whereas, too, the average attack ends thus within the day, in twelve or twenty-four hours, exceptionally it may go on to forty-eight hours or longer; and whereas the frequency of the attacks will be every two or four weeks, they may come very much oftener and in some instances there may even be what Feré called an *état de mal*, in which there will be a continuous series of attacks. So far we have been describing the ordinary or *simple migraine*.

To some authors the only true migraine is the so-called *ophthalmic migraine*, which is characterized by certain manifestations referable to the eyes. In addition to the other premonitory symptoms, there will be noted such things as flickering, a sensation of cloudiness, and the appearance possibly of a black spot. At the same time there may be head noises and a metallic taste in the mouth. Then may come either an amblyopia or certain spectra, or alternation of amblyopia and spectra. Sometimes a blindness will exist alone and this blindness may be either unilateral or bilateral, or it may be a hemianopsia. At other times the spectra already mentioned will be the chief characteristic, a little spot tinged with color and widening like the ripples in a pond, and a new spot forming and again widening. Sometimes the zig-zag line which bounds the ripple, and from which the name fortification comes, will be varicolored, while in other instances it will be simply golden. In addition to the metallic taste already mentioned may be other parasthesias, and also frequently associated with this ophthalmic type are the aphasias which for the most part are of the motor sort, although rarely we may see word deafness. In some cases there will be pronounced mental symptoms which have caused this type to be designated as *hemicrania psychica*. Here there may be a certain amount of confusion and hallucinations of sight and hearing, and a transitory maniacal state. The headache in the ophthalmic type is generally described as being severer than in the ordinary type although, as already stated, an attack of the ophthalmic type may begin and end with the spectra. In other respects the ophthalmic type will be similar to the simple type already described. As a subvariety of the ophthalmic type may be described the ophthalmoplegic type in which, in addition to many of the symptoms already described, there will be a paralysis of the third nerve; and this ophthalmoplegia is sometimes a total internal and external one. Here the headache is generally a one-sided one, and on the side of the palsy. Other nerves involved are the fifth, seventh, and twelfth. This type is much less common than the others; Flatau reported but two in fifteen hundred cases. Christiansen says that the ophthalmoplegic type is often discovered later to be simply a phase in the development of a meningitis or a brain tumor.

Oppenheim had a patient in whom each attack was accompanied by cerebellar symptoms such as dizziness and cerebellar ataxias. On the basis of this case he postulated a cerebellar type which has from time to time been described by others.

Diagnosis.—As a rule this is very easy, and the patient could make it himself if he had the vocabulary. A periodicity with complete freedom from symptoms between attacks is generally impossible to overlook. As Christiansen remarks, the symptoms are invariably associated with the attack and are never after-effects, as in epilepsy. When symptoms are found coming after the attack, a complication must be suspected. In the case of ophthalmoplegic migraine especially, must one be prepared to find such things as meningitis, tumor, and the like. Confusion with sensory epilepsy is warned against, but the aura in epilepsy is short as compared with the aura in those cases of migraine with manifestations of cortical irritation. Toxic headaches of all sorts must be ruled out, and can be if care be taken. The same is true of the headaches of neurosyphilis, of the anemias, of sinus disease and of organic brain disease, such as meningitis or tumor. Certainly, error here will soon be cleared if the patient be carefully and continuously observed. The neurasthenic or hysterical headache may give trouble at times; but if the history be carefully taken and the patient repeatedly observed, the migraine headache will differentiate itself in its beginning, its course and its ending, from the neurotic one, and this in spite of the fact that neurasthenics and hysterics have migraine, too.

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LEROY BRIGGS, M. D. (384 Post Street, San Francisco).—*Prognosis and Treatment.* In dealing with the question of prognosis in migraine, one is concerned only with the future of the attacks themselves and not with the patient as a whole, since there is never any menace toward life. In the vast majority of instances the outlook for recovery is excellent, provided the patient lives long enough, as the disease eventually stops spontaneously somewhere around the sixth decade. This cessation may occur abruptly, but more commonly the attacks become milder and less frequent for some years before ceasing entirely. Possibly to be considered with the prognosis is the very rare instance of the transmutation of migraine into epilepsy, with all the significance that the latter disease carries.

In any discussion of the treatment of true migraine we must at the start face two fundamental facts: first, that we are dealing with a disease in which there is no known pathology, no possible objective means of diagnosis, and therefore no specific line of therapy; and second, as has just been mentioned, the so-called cure is effected solely by time, and occurs spontaneously and irrespective of all therapeutic measures.

We have, however, two lines of attack in attempting to help the unfortunate sufferer. Primarily, and most important, is to devise means of diminishing the frequency and intensity of the headaches, and secondarily, are the purely symptomatic measures for the relief of pain. It is with the first situation that real constructive aid may be rendered.

It has long been recognized that fatigue, worry, excitement, or any psychic trauma almost invari-

ably precipitate attacks of migraine in sufferers from the disease. A common clinical observation is to find patients who have gone along for years averaging an attack a month, jumping up to one or two a week under some mental strain. Many a patient has wondered at the seeming coincidence of having an eagerly anticipated pleasure completely ruined by awakening with a headache on the long-expected day, and has marveled at the devilish perversity of his Nemesis. The wonder has always been that these persons, intelligent as they usually are, so rarely recognize this provocative relationship, and it behooves us, therefore, definitely to instruct them as to the importance of mental hygiene in the relief of their trouble.

In this day of high-tension life, hedged about by innumerable inhibitions, it is well-nigh impossible to secure the placidity so necessary for a minimization of strain, yet a great deal may be accomplished through the dual medium of intelligent instruction and willing coöperation. The strict avoidance by these patients of unnecessary burdens, as committee and club work, and those various other extramural activities which take such toll of our time and temper; the interdiction of much of our so-called "sport," which is not play at all but intensive competitive endeavor; and the realization that life may be very full and happy even though supremacy be not obtained, are all lessons which if learnt will do much to smoothe the migrainous pathway. The unavoidable mental hazards of life may not be dodged, but the development of a philosophy which will permit of an equanimity of spirit in spite of them, may achieve great results.

Although the correction of psychic faults is pre-eminent, the rectifying of any physical defect is of considerable importance. Possibly because of the demand by the layman for tangible efforts this latter has attained a position relatively greater than it deserves, especially in comparison with the former. The eradication of diseased tonsils, abscessed teeth, infected gall-bladders, may benefit the sufferer but will never cure migraine. Attention to refractive errors may make reading easier and clear up so-called eyestrain headaches, but it ends there. Smoothing out peristaltic difficulties by training, proper diet, and a minimum of drugs, will give the anxious patient confidence and help eliminate the constipation phobia, but that is all. Acquisition of a better posture and the development of a good musculature through systematic exercise will bring about a feeling of well-being that will make life more enjoyable, for, after all, *mens sana in corpore sano* is a pretty sound doctrine. All these various things (and others if necessary) should be accomplished to bring about as ideal a state of bodily health and hygiene as possible—done with the distinct understanding that a cure is not to be expected, but that diminution in frequency and an amelioration in severity of the headaches is all that can optimistically be hoped for. Obviously this must be true, as a diseased organ or a disordered function cannot be the cause but only a possible exciting or contributing factor.

One special word as regards diet. The mere fact that nearly every diet imaginable has been recommended should be sufficient in itself to denote the futility of seeking a cure in that direction. Every possible combination has been advocated, the results varying with the enthusiasm of the observer. Before yielding to the siren call of the dietary faddist, it is recommended as a preliminary measure to learn from a group of migraine sufferers just what each considers the absolute cause of his attack. The lack of unanimity should produce such a healthy feeling of skepticism that further steps will be taken most discreetly.

If many measures have been attempted as a cure of the disease, their number is but small as compared with the drugs and procedures advocated for the relief of the actual headache. Here again we have a deterrent in our hope for a panacea. Each physician may have his own favorite remedy, but no two patients find relief in the same thing, a fact not insignificant. So often the nausea and vomiting preclude the giving of anything by mouth. Inasmuch as we are dealing with a disease of long standing, drugs of the opium group absolutely should be interdicted. One's personal feelings tend to prolonged mild sedation between attacks, as in epilepsy, with more vigorous action during or, if possible, just preceding the headache. To accomplish this either the bromids or phenobarbital are the drugs of choice. The more strenuous measures of protein shock or radiation of the head for relief of pain should be used with the greatest of caution and only in the most prolonged and intractable of attacks.

Possibly much of the reputed virtue of the therapeutic agent is inherent in the confidence with which it is prescribed, rather than in what it intrinsically possesses. When all is said and done, the majority of sufferers, discouraged by the failure of many therapeutic experiments, eventually will follow out their own line of procedure—the quiet darkened room, absolute rest in bed, the hot or cold application, with as much stoicism as they can muster, to await the relief which time inevitably will bring. And, after all, what better treatment of migraine is there?

* * *

GORDON E. HEIN, M. D. (San Francisco Hospital, San Francisco).—Migraine is seldom hard to recognize if sufficient time for observation is allowed: a story of "sick headaches" in one or both parents as well as in other members of the family, of periodic recurrence, and of progressive development of the complete attack, ending in remarkable temporary recovery, seldom causes uncertainty as to a name for the condition.

The unfolding of the complete attack has always been of interest to me. For a given individual the type of attack rarely varies, and in most sufferers the attacks are very similar. The victim awakes in the morning knowing that he will have an attack unless it can be aborted. A curious heaviness and mental sluggishness, often accompanied by visual disturbances varying from slight indistinctness of vision to colored fortification spectra and even blindness, partial or com-

plete, warn him of phenomena which he knows will follow. Even at this time inequalities of pupils may be noted as well as changes in expression and color of the skin. An appearance of tiredness or sleepiness, with drooping eyelids and frequent yawning, often occur at this period.

Other widespread sensory changes, such as tingling or numbness of extremities and abnormal sensitivity to external stimuli, light, heat, pressure, noise, tobacco smoke, etc., are soon succeeded by headache, followed in turn by nausea and vomiting which precede recovery. The sequence of premonitory apathy, sensory phenomena, headache, nausea, vomiting, followed by recovery, is fairly constant. Motor aura are rare.

The course is not evenly progressive. Nausea comes and goes. Headache becomes alternately less marked or intensified.

The speed with which recovery takes place is dramatic. A patient may have been ill for a week and within a few hours may feel perfectly well; although many prefer to sleep following an attack and feel completely recovered upon arising.

Of more interest to me are the factors which modify the course. Migraine tends to disappear at the end of life, but not always. Why?

Attacks are precipitated and increased in frequency by emotional or mental strain. It is not hard to predict an attack in a migraineous individual if he is under observation, and I have a feeling that migraine is of value to its possessor in calling a halt upon excessive activity.

Women with frequent migraine attacks may be entirely free from them, and usually are, during pregnancy. Why? If we had the answer, I am sure that our therapy would be more satisfactory.

Some patients with migraine seem to think that they are sensitive to particular foods, and some apparently improve upon careful attention to diet. The fact that many different foods are held causative by various patients may mean that we have much yet to learn about individual sensitivity to particular foods or portions thereof.

Occasional episodes are seen in migraineous individuals characterized by abdominal pain, nausea, and vomiting. At times these episodes are followed by characteristic headache, at other times not, but in either instance they add appreciably to the diagnostic difficulty. The abdominal pain leaves as abruptly as the headache, and in all likelihood is closely related.

For relief of the attack of migraine, each sufferer has his own favorite procedure. After the premonitory warnings have been noted, attacks may be avoided by diminishing the number and intensity of all external stimuli, and by resting. Sedatives such as bromids, phenobarbital, or sometimes vigorous catharsis, may suffice to stop further progress.

When pain has appeared, sodium salicylate or one of its various substitutes with one of the bromid preparations is of aid. The old combination of a gram of sodium salicylate and a gram of sodium bicarbonate in a cup of hot black coffee has given relief many times. A towel dipped in

hot water and applied over the forehead relieves pain more often than cold in the form of an ice cap. After the attack is well developed and nausea has started, little absorption seems to take place from the gastro-intestinal tract, so that oral medication becomes of little avail. Plenty of warm water containing sodium bicarbonate and induced vomiting may shorten the attack.

I have seen a number of patients relieved by an ounce or two of whisky at this stage. Fortunately migraine attacks, after all, are self-limited.

The fact that attacks may disappear, during pregnancy for example, seems to offer hope that some day migraine may be prevented entirely.

Insulin.—The first speaker on insulin, the second main topic of the recent Congress on Disorders of Metabolism held at Vienna, was Staub of Basel, who called attention to the contrast between the pancreatic hormone and the hormone of the suprarenal glands and discussed the effects of insulin on the nervous system. He advanced a new theory in explanation of diabetes. He regards insulin as a hormone that acts on the parasympathetic and produces a reduction in the tonus of that system. Herxheimer presented facts connected with the history of diabetes. In 1845 it was first recognized that changes in the pancreas occur in diabetes. In 1889 Minkowski and Mering demonstrated that the removal of the pancreas produces diabetes. That same year the term "internal secretion" was introduced. A short time later it was shown that the pancreas consists of two parts; one part furnishes the ferments for the intestine, while the other portion, the islands of Langerhans, regulates sugar metabolism. Herxheimer pointed out that reduction or atrophy in the number of "cell islands," their induration and hyaline degeneration, are characteristic of diabetes. The cell islands resemble closely in structure the remaining tissues of the pancreas, and it is believed that their new formation from the other part of the gland is possible, as has been shown by the experimental ligation of the pancreatic duct in animals ("Mansfeld's effect"). The blood sugar drops then to one-eighth of its normal value. This rather difficult operation has been successfully carried out on man (young diabetic patients). No detailed reports, however, have been furnished as yet.

If You Are Interested in School Statistics.—If you are a student nurse, you are one of the 86,649 in the United States. Presumably you attend an accredited school of nursing, of which there are 1,656. Besides these there are 278 schools in the country that have not been able to meet the standards set for accrediting in the various states.

One out of every three or four hospitals in the United States conducts a school of nursing. The hospitals of the country employ 48,567 graduate nurses on a full-time basis for nursing only. Some 8,000 registered nurses are employed in the hospital for other than bedside duties.

These are figures compiled in 1933 by the Council on Medical Education and Hospitals of the American Medical Association. They agree, in general, with the statistics of the Committee on the Grading of Nursing Schools.

You have been told many times that there are too many nurses in this country. The American Medical Association has said repeatedly that there are too many doctors. Your professional organizations say that there are too many schools of nursing. It now appears that there are too many hospitals. Although this does not apply equally to all communities, the American Medical Association's figures show that there is an oversupply of hospital beds, and that the number of hospitals is increasing six times as fast as the population.—*The A. N. A. Bulletin.*

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EDITORIALS*

THE ALAMEDA AND SAN DIEGO MEDICAL SERVICE PLANS

The Economic Symposia of the Del Monte Annual Session.—At the annual session recently held at Del Monte, the first two of the general meetings were given over to a discussion of some current problems in medical economics. The interesting papers by Doctors Ray Lyman Wilbur of Stanford, Arthur C. Christie of Washington, D. C., and R. G. Leland of Chicago, given at the opening meeting, were printed in the May CALIFORNIA AND WESTERN MEDICINE. Members of the California Medical Association who failed to read those articles should try to do so when leisure presents. The essayists presented an excellent survey of some of the major topics now under discussion in the lay and professional press.

* * *

The Alameda and San Diego Medical Service Plans.—The current issue of CALIFORNIA AND WESTERN MEDICINE prints two additional articles, one by President George G. Reinle of Oakland and the other by Dr. Hall G. Holder of

* Editorial on subjects of scientific and clinical interest, contributed by members of the California Medical Association, are printed in the Editorial Comments column, which follows.

San Diego, dealing at length with two significant experiments now being tried out by two of the county medical societies of California. The plans are intended to provide ways and means whereby low-bracket income and indigent citizens may have ready access to skilled medical and surgical care. The economic and the professional obligations involved in the two procedures, and the manner in which they have thus far worked out in practice, are explained in considerable detail. These articles will be found on pages 1 and 6.

* * *

Why These Alameda and San Diego Plan Articles are Emphasized.—Attention is called to these plans in the hope that officers and committees of the county medical societies of California will give the same special consideration. The papers by Reinle and Holder also give valuable information on procedures having to do with local county hospital and clinic activities; and both are subjects of great importance to every county medical society and community in California.

It is possible that during the summer vacation months county medical society committees already existing or yet to be appointed may be able to make preliminary surveys of their respective local county hospital and clinic situations. Reports on such live topics would be received with real interest at the end of the summer vacation. In addition to the value accruing to every county society—if it compiled first-hand and accurate information on the care of its own low-bracket income and indigent citizens—there would be the further advantage of making such data available to the California Medical Association Department of Public Relations. The members of that important State Association committee have given most loyal and efficient service in their studies of some of the California problems which have to do with these, and related phases of medical practice; and further co-operative study by component county society committees will aid the movements greatly.

To appreciate properly what our colleagues in Alameda, San Diego, and other counties and communities are doing, it is necessary that all of us give of ourselves: first, in general study of these problems; and secondly, in active participation, as well as of thought in the making and carrying out of plans which aim at solution of some of the problems everywhere facing us. In proportion as we display real interest in these problems, we will find our own understanding of plans for such betterment much clarified.

THE USE OF THE INJUNCTION IN MEDICAL PRACTICE

A Recent Article in the American Medical Association Bulletin.—William C. Woodward, Director of the American Medical Association Bureau of Legal Medicine, in the American Medical Association Bulletin of May, 1933, calls attention to a recent decision of the West Virginia Supreme Court of Appeals, which presents some phases of legal procedure worthy of serious con-

sideration by all who are interested in the maintenance of adequate professional standards.

The enactment of a good state medical practice act is only a first step in the protection of the public from incompetent practitioners. The success of such a law depends not only upon the personnel of the examining board, but also upon the personnel in the investigation and legal departments of the board.

* * *

Importance of Personnel in Legal Department. When illegal practice by unlicensed practitioners becomes evident, many physicians are apt to think that the reason must be due to a poorly drawn state medical practice act. As a matter of fact, the explanation is not infrequently found to be dependent on the indifference or connivance of the duly constituted legal representatives of the state. Some of these legal officers at times, for reasons of political or other expediency, either close their eyes to the violation of medical licensure laws or perform their duties in medical statute enforcement in such half-hearted manner that the poor results obtained furnish a good alibi for stressing other work in their departments. That is why the personal attainments of the investigators and the attorney or attorneys for a board of medical examiners are so important.

* * *

Recent Changes in the Legal Department of the California Board of Medical Examiners.—On this point, attention may here be called to the fact that this year the California Legislature passed a measure (since signed by Governor James Rolph) whereby, supposedly in the interest of economy, the positions of the attorneys of some of the boards and bureaus of the state government were abolished. The legal work of such boards is hereafter to be carried on by a deputy or deputies of State Attorney General Webb, these deputies acting, when necessary, in conjunction with district or other local attorneys.

One of the state boards which lost its own attorney through this new law was the California Board of Medical Examiners. It is sincerely hoped that this new plan of legal operation will have no detrimental effects upon the work of our state examining board. For it is to be remembered that the Board of Medical Examiners during many years past has not received any moneys whatsoever from the general tax funds of California; and that the income from which its expenses have been paid was derived altogether from licensure and similar fees, all received from physicians. The reason physicians have sanctioned such special taxation of the members of their profession has been due to their great interest in the public health, and because they construe it to be important that proper legal standards of practice should be maintained by every commonwealth. During the next year it will be interesting to observe how the new legal arrangements for the California State Board of Medical Examiners will work out in practice, to be hoped for the best.

The Injunction Approach in the West Virginia Case.—Coming back to the decision of the West Virginia Court of Appeals of May 13, it is noted that the legal procedure used in that case, which was directed against an illegal practitioner, was not by way of a criminal action, but by means of a bill of complaint filed in a court of equity.

In other words, the illegal practitioner was not haled into court on a criminal action proceeding, because in a criminal action it would have been necessary to prove to the satisfaction of a jury—sometimes a very difficult task—that the unlicensed practitioner was carrying on his illegal practice "beyond a reasonable doubt." In the West Virginia case three licensed physicians, as citizens who felt they had been deprived of certain legal and property rights, went into a court of equity and petitioned that an injunction be granted to prevent the unlicensed practitioner from continuing to carry on his illegal practice.

The following excerpt from Woodward's article emphasizes some of the differences which arise in injunction and criminal proceedings:

"In favor of the use of injunctions for the protection of the medical profession and of the public against the activities of unauthorized practitioners of medicine, it may be pointed out that prevention is the only safeguard against the damage that such practitioners may do, and prevention is afforded by injunctions only. Fines and imprisonment for offenses committed long ago do not afford relief from injuries from past misconduct nor protect against the consequences of offenses to be committed in the future. Injunctions are more effective, too, than are criminal prosecutions, because in criminal prosecutions the evidence of wrongdoing has to be proved beyond a reasonable doubt, to the satisfaction of a jury, and in event of acquittal no appeal can be taken by the prosecution, even though it may be desired to secure rulings of a higher court on what seem to be errors of law committed in the trial court. On the other hand, under the principles of the West Virginia case just decided, if a bill of complaint is filed in a court of equity, with a petition for an injunction, it need be shown to the satisfaction of the court only that the respondent practitioner is competing unlawfully with licensed practitioners and is a menace to the welfare of the people, and that there is no other adequate remedy for the situation—and this need be shown only by a preponderance of evidence. If the petition is denied by the trial court, the petitioner can appeal to higher courts, where all questions of law can be finally settled. . . ."

* * *

With the West Virginia decision now a matter of record, it is probable that in other states of the Union this procedure, by means of injunction, will receive further trial. On its face, the method seems to have much to commend it.

MAKING A WILL

Why Physicians Should Know Somewhat About Wills.—Believing that the subject would prove of great appeal to members, General Counsel Hartley F. Peart, Esq., of the California Medical Association was requested to write an article touching upon and illustrating the complexity of the problems pertaining to the making of wills, and on some of the more important statutes of California concerning community property rights and other interests in a decedent's estate. As General Coun-

sel Peart points out, physicians, because of their confidential relations with patients, are frequently consulted by the latter with reference to the making of their wills; and it is often necessary for a physician to suggest that a patient get his earthly affairs in order. For these reasons, as well as for the personal information of members of the Association, it is hoped that the advice given by Mr. Peart will be found of value. The article referred to appears in this issue, page 20.

General Counsel Peart was for many years the inheritance tax attorney for the treasurer of the city and county of San Francisco, and thereafter special counsel for the state controller in a number of leading cases involving inheritance tax due to the state of California; including the estate of the late cattle baron, Henry Miller, in which an inheritance tax of over two million dollars was paid, after years of legal proceedings spent in determining and fixing the tax. The administration of the Inheritance Tax Act of California is directed to the fixing and assessing of such tax on the interests and property which pass from a decedent by reason of his death.

Singularly enough, the case of John Brown, mentioned in the article above referred to, pertains to a member of a doctor's family; and an inquiry sent by the editor to the general counsel concerning some features of that estate, resulted in a suggestion that the article be written.

DECREASED BUDGET OF STATE BOARD OF HEALTH

Dismissal on July 1 of some of the technically trained personnel of the California Department of Public Health, with the probability that some of the smaller full-time county health units will have to be abandoned, was recently announced by Dr. John H. Graves, president of the State Board of Public Health.

This action, Dr. Graves said, has become necessary as the result of a 20 per cent reduction made by the legislature to a budget which the department had previously reduced by 25 per cent.

Notices of their separation from the service have been given to a number of the department's employees; in the classifications that include pediatrician, public health nurse, sanitary engineer, bacteriologist, rodent hunters (bubonic plague) and stenographers.

On a coöperative basis, the state and federal public health departments have contributed toward maintenance of some of the California full-time health units. These funds have been matched by the Rockefeller Foundation. This financial support by state and federal governments is being withdrawn, which means there will be no further contributions from the Rockefeller Foundation. Unless the counties can raise their own funds—and they report this will not be possible—full-time health units which have been receiving this aid necessarily will be obliged to revert to their former status, with part-time health officers.

"The entire budget of the State Department of Public Health," Doctor Graves said, "was slaug-

tered by the so-called economy bloc in the legislature. The total appropriation allowed by the legislature is so small—representing a 45 per cent reduction over the present biennium—that some of our bureaus have been seriously crippled.

"Child Hygiene, in which field much of our program of prevention lies, has little left—a bureau chief, a stenographer, a part-time public health nurse.

"The field worker in the Bureau of Tuberculosis has been removed. Previously, our motor clinic and its personnel had to be discontinued. This entire bureau now consists of two persons—the chief and a clerk.

"All of the work that lies ahead of us, not only for the prevention of tuberculosis, particularly in children, but for the prevention and control of other communicable diseases, and for public health work in general, is in jeopardy. Public health in California, I am afraid, will run to a low ebb unless the legislature, in the July session, restores some of our funds."

* * *

Attention is called to the above, so that the physicians of California may better understand the new regulations which, under these conditions, must come into operation.

The State Board of Health suggested to the legislature that if the state tuberculosis subsidy to counties (\$3 per week per patient in county sanatoria measuring up to proper state standards) was reduced to a \$2 basis, the saving to the state treasury would have amounted to something like \$162,000 per year; and that if the sum so saved could have been allocated to the State Board of Health, none of the essential bureaus or activities of the State Board of Health would have been jeopardized.

It is unfortunate that the budget revision committee of the legislature failed to visualize the importance of the public health work of California; and that in the effort to create a balanced budget, the blue pencil method of reduction should have been followed. It is hoped that in the postponed July session of the legislature, this budget will be reconsidered. Physicians who are interested in these public health activities should contact their local legislators during the recess, which ends on July 17, in the hope of securing a reconsideration of these matters when the legislature again convenes.

EDITORIAL COMMENT*

MEDIASTINAL PLEURISY

Mediastinal pleurisy is an inflammation of the pleura covering the mesial side of the lung and the lateral surface of the mediastinum. Not until there is encysted fluid between these surfaces are

* This department of CALIFORNIA AND WESTERN MEDICINE presents editorial comment by contributing members on items of medical progress, science and practice, and on topics from recent medical books or journals. An invitation is extended to all members of the California and Nevada Medical Associations to submit brief editorial discussions suitable for publication in this department. No presentation should be over five hundred words in length.

there definite clinical and roentgen-ray signs of the type of pleurisy we are dealing with. While it is not a frequent lesion, it is probably more often overlooked or incorrectly diagnosed than any other pleural condition. Mediastinal pleurisy was diagnosed by Laennec, Andral, and others long before the discovery of the roentgen ray. The roentgen examination remains, however, the best diagnostic procedure. An excellent résumé of the early history and review of the first reported cases of mediastinal pleurisy is that of Anders Frick.¹

The dry and serofibrinous types of mediastinal pleurisy as a rule are tuberculous in origin and often heal spontaneously without any serious results. Rupture into a bronchus or other important organ of the chest usually results fatally unless the invading organism is the pneumococcus. This latter type of infection gives a vomica thin in consistence and does not have a foul odor. Rupture usually takes place within twenty days after onset of the infection; therefore early diagnosis is important.

Because the pleural effusion is adjacent to the important mediastinal organs, the clinical signs differ radically. A good description of the clinical syndrome is given by Dieulafoy. He states: "Mediastinal pleurisy starts as an acute febrile attack with pain, fever, cough, and dyspnea. The symptoms caused by pressure on the mediastinum are dyspnea, stridor, sucking in of chest wall, dysphagia, distention of the veins of the chest, fits of coughing and suffocation, hoarseness, dysphonia, and spasm of the glottis. All, or only some, of the symptoms may be present, due to whether the pressure is on the trachea, esophagus, azygos vein, the pneumogastric or recurrent laryngeal nerve." The clinical sign of dullness, usually posterior, appears about the tenth day. When there are changes in the voice a bronchoscopic examination is also advisable.

The classification of types of mediastinal pleurisy is usually that based on the location of the effusion in relation to the pulmonary ligament, such as anterior and posterior, right and left. The posterior type appears to be the most common. The left, anterior type, is more frequently fatal than the other types.

The roentgen technique consists of a careful fluoroscopic examination of the chest in all positions, and of films made in those positions best suited to show the pathology in each particular case. Overexposed films are often useful in left-sided effusions. The injection of iodized oil or air, inflation of the stomach and the visualization of the esophagus by barium mixture are valuable diagnostic measures.

Treatment consists of locating encysted fluid by puncture, repeated if necessary, and careful surgical drainage so that the general pleural cavity is not infected.

In any obscure chest condition of sudden onset, with pain and nonproductive cough and with little

or no increase in temperature, pulse rate, or leukocyte count, the possibility of mediastinal pleurisy should be kept in mind. No doubt many cases of mediastinal pleurisy have been overlooked in the past.

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HISTOLOGICAL SPECIFICITY

VI[†]

The human body is an organized colony of widely different immunochemical characteristics. Each tissue is an unique mixture of numerous ancestral, mammalian, amphibian and subamphibian proteins, lipoids and carbohydrates, thinly veneered with human-anthropoid serum specificities. Following conjugation of the ovum and the spermatozoan there is a phylogenetic recapitulation of ancestral evolutionary biochemical history, which recapitulation is not fully complete during intrauterine life.

While the above statements grossly overemphasize the few imperfectly known facts of human tissue specificity, they do outline the generally accepted working hypothesis in current bacteriological and immunological research.

The earlier immunologists, of course, did conceive the possibility of immunochemical differences between the blood and fixed tissues of the same individual. They, however, were unable to demonstrate their postulated humoral-cellular specificity differentials. They concluded that, for all practical purposes, such differences, if they do exist, are negligible factors in specific immunity. Current methods of specific diagnosis and specific therapy, therefore, consistently ignore all reference to possible organ-specific immunochemical factors.

Data contrary to the conventional unitarian concept of tissue specificity began to accumulate as soon as the newer fractionation techniques were applied to animal tissues. The isolated proteins of the crystalline lens were soon found to be widely different from the serum proteins. All thyroglobulins were found to be of approximately the same specificity in different mammalian species. The lipid-free kidney proteins were demonstrated to be organ-specific and not species-specific. Protein fractions that can be figuratively described as species-specific, genus-specific, and phylum-specific were demonstrated in the blood stream.

Equally convincing data were obtained from studies of the alcohol-extractable tissue lipoids. The brain-lipoids, for example, are now recognized as being immunochemically identical in such widely different species as man, sheep, rat, and frog.¹ The kidney lipoids are also apparently

[†] Part I of this series was printed in the February CALIFORNIA AND WESTERN MEDICINE, page 116; Part II in March, page 158; Part III in April, page 275; Part IV in May, page 380; Part V in June, page 447.

¹ Lewis, J. H.: Jour. Immunol., 24:193 (March), 1933.

¹ Frick, A.: The Different Forms of Mediastinal Pleurisy with Report of Three Cases, Jour. Am. Med. Assn., 55:2042-2048, 1910.

organ-specific. The liver lipoids combine organ-specific and species-specific properties. In the latest addition to such data, it is claimed that there are pylorus-specific, duodenum-specific, and rectum-specific lipoids in the corresponding parts of the gastro-intestinal mucosa.²

Immunochemical embryology has yielded equally startling data. The embryonic lens proteins, for example, are allegedly species-specific and not organ-specific as in the adult. Certain alcohol-extractable embryonic lipoids allegedly disappear at birth, only to reappear in malignant disease.³ In certain animal species the complex physico-chemical balance conventionally designated as "serum complement" is absent at birth. Serum properties simulating specific agglutinins, hemolysins, and virusidal agents appear apparently spontaneously in children and in the maturing young of many animal species.

Stanford University.

W. H. MANWARING,
Palo Alto.

COMMON SURGICAL ERRORS

These lines would call attention to the fact that most of the deformities requiring surgical correction need never have occurred. For some inexplicable reason splints are forgotten until too late. A patient having a chronic or prolonged illness becomes uninteresting; and, before his physician realizes it, has developed deformities which the simplest sort of splinting, if applied early, might have prevented.

There are certain rules which can be followed in any community by any physician.

1. Any wound heals best at rest. Splints produce rest. A small superficial skin abrasion on the flexor surface of the wrist assumed real importance when the boy's parents began to demand an explanation of failure to produce a cure after four weeks. The application of a splint produced a dry closed wound in eight days.

2. A person suffering from infantile paralysis can be rendered invaluable aid by his doctor, irrespective of that doctor's particular training or specialty, if he is watched for beginning deformity and the deformity prevented by early bracing.

3. Any acutely diseased or injured joint should be splinted. To make such an obvious statement seems ridiculous. Everyone in the medical profession knows this without being told. But the following cases, seen in the last year from the best county hospitals in California, would indicate the contrary: (a) sciatic nerve injury with knee flexion contractures and severe toe drop; (b) acute staphylococcus infection of ankle joint with 70 degrees equinus deformity; (c) adduction flexion deformity of a hip which became ankylosed after open reduction for traumatic dislocation; (d) flexion and wrist drop after burns to palm; (e) a simple impacted fracture of the femur.

² Witebsky, E., and Zeissig, A.: *Zeitschrifff. f. Immunitätsforsch.*, 76:266, 1932.

³ Hirszfeld, L., Halber, W., and Rosenblat, J.: *Ibid.* 75:209, 1932.

oral condyles with knee flexion contracture. These cases were in the hands of good men. These deformities need never have occurred. All of them required surgical intervention.

4. Any joint so diseased or injured as to threaten a loss of motion should be splinted in the optimum position for use of a stiff joint and held there in the intervals of treatment, that is, 70 degrees abduction of the shoulder; 90 degrees flexion of the elbow; 40 degrees cock-up of the wrist; hand in position to grasp a large ball (never flat); hip 10 degrees flexion, with abduction according to existing or anticipated shortening; knee 5 degrees flexion; foot 5 degrees below a right angle to allow for wearing a heel. It is common practice to place an injured hand on a flat board splint. This position is the one in which the thumb is absolutely useless. The thumb must not be at the side, but in front of the palm to be used.

5. In cases of nerve injury any physician may institute good treatment by use of the simple rule that splinting should reverse the tendency to deformity. For example, a cock-up position for wrist drop, extension of the knee in paralysis of the quadriceps femoris, etc.

6. Splinting can do harm, but that harm is never from the rest or fixation. Damage from any dressing must be due to one of four things—undue pressure on the skin, compression of a superficial nerve, obstruction to normal circulation, or bad position. If the limb is not more comfortable after application of a fixation dressing, if the patient complains of discomfort in a brace, splint or cast, *listen to him!* When he states his foot goes to sleep in a cast get an accurate description of what part of the foot. Often it will be found that he really means the fifth toe and a small area just back of the first digital interspace on the dorsum of the foot. Such findings indicate pressure on the common peroneal nerve at the head of the fibula. Similarly in other faulty dressings, careful attention to the patient's complaints will disclose real errors in the application of the apparatus more often than not. Never fail to heed your patient if he is wearing a rigid dressing of any kind; bad disposition is the last diagnosis to use in explaining the discomfort of such a dressing.

To generalize, it is safer to splint an injured or diseased extremity than not. The common fear of losing joint motion is not justified. Rest hastens healing, and rapid healing ultimately conserves motion. Mechanical support relieves pain and muscle spasm; the patient will be more comfortable, and his physician will have less trouble. And finally the fact that a splint was applied is a remarkable proof, in case of legal controversy, that the physician anticipated and attempted to avoid a bad result. In short, splint everything that can be splinted and the percentage of error will decrease.

Orthopaedic Hospital.
2417 South Hope Street.

HAROLD E. CROWE,
Los Angeles.

C. M. A. DEPARTMENT OF PUBLIC RELATIONS

An open forum for progress notes on the department's activities, and for brief discussions on medical economics. Correspondence and suggestions invited. Address Walter M. Dickie, Room 2039, Four Fifty Sutter Street, San Francisco. This column is conducted by the Director of the Department.

The Position of the State and County Medical Societies*

ALSON R. KILGORE, M. D. (San Francisco).—Let us be frank. The medical profession, if it had its way, would not choose any scheme of health insurance. We value very much the fine relationship of private patient to private physician, a relationship in which the physician feels his entire responsibility to his patient alone. It is fair to state that the interests of patients and physicians are identical in this matter. Certainly it is of advantage to the patient that the physician's entire responsibility be directed toward him.

But we realize in the medical profession that the financial problem of serious illness is very real and urgent. We are willing to sacrifice some of our preferences to meet a real community need. For two years we have studied this problem in San Francisco. In general, the conclusions of the Section of the San Francisco County Medical Society parallel closely the conclusions of the Public Health Section of the Commonwealth Club.

Increase in Illness Costs Has Raised Problem.—We have become convinced that the cost of good medical service—not only physicians' service but all that goes with it—has increased materially and is likely to increase further. Our ideas have been confirmed by the report of the Committee on the Costs of Medical Care. The cost of hospital and nursing services and constantly increasing laboratory work have been added to what the doctor formerly got. To my mind, this increase in total cost of sickness has raised the whole problem. Today when good medical service means not only the doctor's service but all the other things we have developed, the cost has become too great for the individual of moderate means to stand.

We are going to see those costs increase as medical knowledge and facilities develop. Fifteen years ago, for example, we knew little about the treatment of cancer by x-ray and radium. Today we have not given an advanced cancer patient what he is entitled to unless he has had these expensive forms of treatment. Within the last two years we have seen the development of apparatus which will produce not the present 200,000 volts but a million volts. We do not know yet how valuable this will be, but if it is sufficiently more useful, all over this country an enormous investment in x-ray apparatus must be scrapped and an additional investment made in the newer device.

Question Is One of Spreading Costs.—This is only one example. We cannot reduce the cost of medical service without reducing its efficiency. The problem, therefore, is not to reduce the cost but to spread the cost over groups of individuals and over periods of time so that the individual who is caught with an uncommon and expensive illness will not be financially handicapped by it.

I said that our Section's conclusions closely paralleled those of the Public Health Section of the Commonwealth Club. We disagree, however, on certain points. We would hardly classify radiotherapy, x-ray diagnosis, and laboratory procedures as "ancillary services." An x-ray film, for example, is only the

means by which an expert in radiology arrives at his conclusions about a patient. We are securing, when we have an x-ray taken of our patient, not a photograph but the opinion of an expert in his field about the patient. We are asking very definitely for a consultation. We cannot escape the logical conclusion that x-ray examinations and, in the same manner, laboratory examinations should be regarded as professional services primarily, and not as ancillary services.

Why Not Apply Insurance to Ancillary Services Also? Following this idea further, it seems to me that the Section's conclusions have come to a certain inconsistency. The recommendation is made that the ancillary forms of medical service—radiological and laboratory tests—should be performed by the government, either city, county, or state. If we are adopting a plan of health insurance which will cover medical service in all its forms, why should we appeal to the state or local government to handle one comparatively small aspect of the whole service? If an insurance plan is to distribute the cost of all medical service, why not let it distribute the cost of the ancillary forms of medical service as well?

Recognizing that there are two distinct branches, however—the services of physicians, and the services of hospitals, nurses, and other nonprofessional elements—the medical societies are frankly divided as to whether a community health service plan should include both at the moment. We are unanimous that a plan of some sort should be undertaken in an attempt to solve the economic problem, but we are divided as to whether that plan should begin with complete hospitalization and medical service, or whether it should undertake hospitalization first.

Limiting the insurance to hospitalization expenses would be simpler in many ways, and its success more easily attained. Some of us believe the first plan should include hospitalization only, and that, with the experience and cost data gained therefrom, a plan for professional medical services could be added at a later time.

The Middle Class and Medical Costs

RAY LYMAN WILBUR, M. D. (Stanford University).—By middle class I assume you mean those people between the indigent and the affluent, and that is where most of us belong. What we are really discussing is the problem of taking care of everybody except the totally indigent.

There has been some diversity of opinion expressed tonight. Doctor Torrey favored voluntary health insurance, with limited governmental activity in extending laboratory and x-ray services. Doctor Yoell goes the whole way in health insurance, but wants the government kept out of it, and piously hopes that by covering everybody the plan can be made solvent and operated largely through the medical profession. Doctor Kilgore opposes governmental operation of laboratory services.

But with all this diversity, throughout there is the tone of something to be done, of collective planning, and of retaining, if possible, the old idea of a family physician.

Ancillary Services Greater Financially than Physician. It is true that the position of the family physician has changed, largely through the development of these "ancillary services." They have become larger finan-

* Excerpts from a presentation of opinions on medical service and health insurance plans, given under the auspices of the Commonwealth Club of California. Lack of space permits only a partial symposium.—W. D., Department of Public Relations.

cially than the doctor. They are important and expensive. And they have given us a great existing plant.

We have this existing plant in San Francisco: hospitals, public and private—some endowed, others operated by religious orders. They have great buildings, well-trained staffs; everything is in operation. We do not have to start back at the base line.

For the moment these hospitals are in difficulty. Increased occupancy has sent the public hospitals scurrying for more tax money. The opposite, low occupancy and insufficient funds from private patients, has actuated the private hospitals to search for some plan to meet their financial difficulties.

The doctor is caught in between. He has become a barnacle on the ship of which he used to be captain; and the question is whether he can attain the pilot's cabin again. Without the trained brain of the doctor, the hospital amounts to nothing, it is a place of death; without his trained brain, the x-ray laboratory means nothing. It is the doctor's trained brain that is of significance. It is to set it free with the sick, to push the economic obstacle off the road, that we are met to discuss tonight.

Repeated Small Payments to Meet Emergency Is Essence. Changes are taking place. I heard of an obstetrician the other day who found it difficult to pay his office rent. Just as many babies were coming into the world with his help, but fewer checks were coming to him. He devised the plan of having each prospective mother bring with her each month one-ninth of the amount it would cost to pay the hospital and the doctor's bill. The doctor is now paying his office rent and going ahead.

Here is the essence of the problem: repeated small payments, over a period of time, to meet an emergency that may or may not come, those payments distributed to the trained brains that will do the job, without middle men, on a basis that will see that the doctor is adequately cared for and the patient given the kind of care he needs. That is not beyond the possibilities.

One of our difficulties is that we are inclined to be perfectionists. In this problem we cannot get everything done at once. But by building around existing plans, we can create islands in the community that will soon spread over most of it.

Try Voluntary System Before Crystallizing Procedure Into Law.—We will have to bring in the idea of group practice, for that is about all the hospital and its staff means. Group practice is a great time saver for the patient and the doctor. For the hospital it is the easiest way to meet hospital problems. It affords the doctor an opportunity for the recreation and further education he vitally needs. It removes the bonds of slavery many private physicians wear. It divides the expense. Moreover, a group system can readily be gathered together around a hospital.

With the help of the county medical society, the hospitals, the hospital council, and the Community Chest San Francisco can begin to solve this problem.

While I sympathize with Doctor Yoell's purpose, I believe that as much should be done as possible without bringing in the legislator. What he does is crystallized into law. Eventually that may be necessary. Meanwhile there is so much opportunity for the physician working with voluntary organizations that my hope is that we will go ahead, building around our health centers, on a trial basis, and have that experience behind us before we think of asking the legislature for definite procedures. We can afford to take a little time. We have taken a great deal of time up to date.

* * *

What Is an X-Ray Examination?

E. H. SKINNER, M. D. (Colorado).—The x-ray machine of today, with its multitude of refinements, provides a definite answer to many special clinical questions and affords a comfortable corroboration of most clinical observations. The x-ray examination has pro-

gressed until the radiologist is no longer satisfied to report upon suspicious shadows; it is no longer a simple photographic technique; it is not merely the taking of films, followed by the dictated report. The x-ray examination is a systematic, painstaking procedure which uses every possibility of shadow value, properly correlated with the clinical history and social career of the patient. The x-ray examination is really a clinical examination with method, mechanics, and manifest artistry.

CANCER COMMISSION*

Report of Chest Tumors Committee

Introduction.—In pulmonary malignancy the neoplasm is, as a rule, symptomatically silent; signs present are due either to the inflammation brought on by interference of the new growth with bronchial drainage or by atelectasis from blocking of a bronchus or by invasion of other structures such as the ribs or esophagus by the neoplasm. Far too often malignancy is not considered until late in the patient's illness. Pulmonary inflammation or tracheobronchial irritation unusually prolonged should lead to the consideration of bronchial or pulmonary malignancy. When a "pneumonia" slips into the class that is so often termed "unresolved," the possibility of underlying malignancy must be considered. Tracheitis, bronchitis, bronchopneumonia, massive lobar involvement, atelectasis or pulmonary abscess are frequent accompaniments of intrapulmonary neoplasms.

Any condition showing signs of pulmonary inflammation which might be diagnosed as one of the above might also be diagnosed as tuberculosis. Therefore, confusion may arise in the diagnosis between tuberculosis and cancer, and as a matter of fact carcinoma of the lung probably not uncommonly is preceded by pulmonary tuberculosis.

Notwithstanding the probability that improved methods in diagnosis are in some measure responsible for the definite increase in the number of recorded cases of intrapulmonary carcinoma, yet the fact remains that pulmonary malignancy has alarmingly increased within the last five years. It is also true that measures to combat its growth and to eradicate it are becoming more effective. Recent advances in thoracic surgery have made surgical exploration a relatively simple procedure, so that easier diagnosis can be made. Also, more effective radiation technique makes it a valuable adjunct to treatment. It is of great importance, therefore, that in a patient with intrathoracic complaints not readily accounted for, malignancy should be early and seriously considered.

SYMPOTOMATOLOGY

1. Carcinoma of the lung is suggested by the following episodes:

- (a) An irritating nonproductive cough, with or without occasional blood-streaked sputum of several weeks' duration, may be the only complaint.
- (b) An acute illness, presumably influenza, bronchitis or pneumonia persisting abnormally long, suggests pulmonary carcinoma.
- (c) Gradual loss of weight and strength over a considerable period of time without any pulmonary signs whatever warrants an x-ray of the chest for the possibility of intrathoracic carcinoma.
- (d) Frequently recurring bloody, or clear, pleural effusion without evidence of heart disease may be due to peripheral pulmonary carcinoma.

The most common symptom of primary carcinoma of the lung is a cough which is approximately twice

* The Cancer Commission was brought into being by the House of Delegates of the California Medical Association to aid in the furtherance of all efforts to combat cancer. The roster of officers and the central office of the Commission to which communications may be sent is printed in this issue of CALIFORNIA AND WESTERN MEDICINE (see front cover directory). This column is conducted by the Secretaries of the Commission.

as frequent as hemoptysis. Other symptoms and signs are pain, fever, dyspnea, cyanosis, effusion, loss of weight, atelectasis, bronchial stenosis and stridor, clubbing of fingers and cavitation.

As suggested before, these symptoms and signs are also those of inflammation and may be associated with any intrathoracic inflammatory process. It is again stressed that carcinoma of the lung may be associated with any other intrapulmonary inflammatory process.

2. Mediastinal malignancy presents signs and symptoms of pressure on mediastinal structures, frequently on the recurrent laryngeal nerve, giving laryngeal paralysis. Signs and symptoms therefore are irritative cough, hoarseness (progressive or recurring), dyspnea, dysphagia, substernal pain, cyanosis and enlarged venous channels, and stridor.

3. Pleural endothelioma is of very rare occurrence. Its presence is suggested by pleural effusion, which is usually bloody, and pain along the course of the intracostal nerves.

DIAGNOSIS

It must always be kept in mind that the signs and symptoms of both intrathoracic tuberculosis and syphilis may be suggestive of intrathoracic tumors. They must, as a routine, therefore, be considered.

The possibility of a lesion in the chest being secondary to a silent primary growth somewhere else in the body must be considered. One must make a thorough physical examination, keeping in mind, especially, the kidney, prostate, testicle, breast, and stomach.

Immediate consultation between the physician, thoracic surgeon, and radiologist is important, both as to arriving at a dependable diagnosis and outlining a definite plan of treatment.

1. Carcinoma of the Lung.

(a) Carcinoma must be differentiated from benign tumors. The most common benign tumors are cysts, such as echinococcus, dermoid or congenital. Other rare benign tumors are lipoma, fibroma, and especially chondroma.

(b) An x-ray is indispensable and valuable information may be obtained from it. A diagnostic artificial pneumothorax often gives valuable information in differentiating a lesion noted by x-ray.

(c) The sputum should be carefully examined for tumor tissue. The patient should be instructed to save any unusual substance in the sputum.

(d) Bronchoscopy, usually followed by an opaque medium injection (lipiodol), is indicated if x-ray alone is inconclusive. Bronchoscopy may not only eliminate bronchogenic carcinoma but foreign body as well and may produce better drainage of an inflammatory area.

(e) Exploratory thoracotomy is justifiable and indicated where other measures fail to complete the diagnosis.

2. Mediastinal Malignancy.

The radiologist should study the mediastinum by means of the fluoroscope and with films at various angles and with barium in the esophagus.

Tumors to be considered are: dermoid and echinococcus cysts; benign tumors, such as fibroleiomyoma, xanthoma, chondroma, lipoma, fibroma, ganglioneuroma, enlarged or persistent thymus, intrathoracic thyroid, aneurysm.

Malignant tumors to be considered are lymphosarcoma, Hodgkin's disease, thymoma, carcinoma of the esophagus, teratoma, intrathoracic thyroid of the malignant type.

Enlarged lymph nodes in various parts of the body may be found and biopsy may establish the diagnosis.

X-ray therapy is a very valuable means of diagnosis, lymphosarcoma responding very rapidly to such therapy and, to a lesser extent, Hodgkin's disease. The latter is variable in its response.

3. Pleural Malignancy.

Consideration should be made of benign cysts and tumors, tuberculosis (the tuberculin test may be of

value), cardiac disease; and roentgenograms should be taken.

Aspirated pleural fluid may be concentrated by standing or centrifugation and examined for tumor cells.

TREATMENT

Medical.—As yet medical treatment has nothing whatever to offer the patient except temporary relief of symptoms.

Surgical.—Lobectomy for carcinoma early diagnosed while the growth still is deeply situated within the lobe itself has met with very considerable success. Sufficient time, however, has not elapsed since the lobectomies were reported to give definite conclusions regarding the range of possibilities. Benign tumors may, of course, be similarly removed.

Roentgenological.—In practically every type of intrathoracic malignancy, hope for prolongation of life depends upon properly conducted radiation therapy. While cures are rare, inoperable cases should have the benefit of a judiciously applied x-ray and/or radium therapy.

SUMMARY

1. The possibility of malignancy should be considered early in any case where signs of intrathoracic inflammation persist.

2. Early consultation should be had between the attending physician, radiologist and thoracic surgeon, in order to arrive at an early diagnosis and to establish a definite plan of treatment.

Respectfully submitted,

C. M. A. CANCER COMMISSION COMMITTEE
ON CHEST TUMORS.

Frank S. Dolley, Chairman	Roy W. Hammack
A. Lincoln Brown, Secretary	Samuel J. Mattison
Philip King Brown	Robert A. Peers
Harold Brunn	Philip H. Pierson
Chesley Bush	F. M. Pottenger
Leo Eleosser	Dexter N. Richards
Sumner Everingham	H. E. Ruggles
Milton J. Geyman	Sidney J. Shipman
Scott D. Gleeten	William H. Thearle
	H. G. Trimble

The results of experiments on rats support clinical experience that anemic patients do not respond well to irradiation, and that tumors with a poor blood supply react badly to irradiation. It follows that before treatment with irradiation every endeavor should be made to bring the patient's blood to as near normal as possible, and that any anemia produced by irradiation should be vigorously treated during the intervals between irradiations, and the blood condition brought back to normal before further treatment is given.—Abstracted in *American Journal of Cancer*, Vol. 16, p. 760, 1932, from Mottram and Eidinow, "On Rats."

The Treatment of Cancer by Antiserum.—It has been found that mice suffering from spontaneous (naturally acquired) tumors can be cured by the injection into the tumor of a suitable amount of euglobulin, a serum protein. In the course of an extensive experiment 74 per cent of mice with spontaneous cancers who received this antiserum were cured, whereas all the control mice (which received inoculations of normal serum) died of cancer. It was found that, as a result of the treatment, 90 per cent of the cured mice were resistant to reinoculation with portions of the same tumor.

The hope naturally arises that it may be possible to attain an equal degree of success in the treatment of human cancer with euglobulin. There is, however, as yet, no certainty that this will be so. In any event many difficulties and disappointments are sure to be met with when the treatment of human cancer begins.—Ninth Annual Report, British Empire Cancer Campaign, 1932.

STATE MEDICAL ASSOCIATIONS

This department contains official notices, reports of county society proceedings and other information having to do with the state associations and their component county societies. The copy for the department is edited by the state association secretaries, to whom communications for this department should be sent. Rosters of state association officers and committees and of component county societies and affiliated organizations, are printed in the directories noted under Miscellany, on the front cover index.

CALIFORNIA MEDICAL ASSOCIATION

GEORGE G. REINLE President
CLARENCE G. TOLAND President-Elect
EMMA W. POPE Secretary-Treasurer

OFFICIAL NOTICE

Notice of Discontinuance of Clinical and Research Prizes for 1934.—On recommendation of the Committee on Survey of Expenditures of the Association, the House of Delegates voted in favor of discontinuance of the Clinical and Research Prizes awards for the present year.

COMPONENT COUNTY MEDICAL SOCIETIES ORANGE COUNTY

The June 6 meeting of the Orange County Medical Association was held in the usual meeting place, the Orange County Hospital.

Doctor Newkirk reported that members of the Reconstruction Finance Corporation were not entitled to county care, the State Compensation Committee reporting that the county is liable and should carry insurance. Doctor Zaiser reported that the matter was being taken up with the Board of Supervisors. Doctor Wallace stated that the insurance plan had the backing of the Association, and referred the matter to the Public Relations Committee.

The guest speaker of the evening was Dr. Edward Huntington Williams of Los Angeles. He gave a very entertaining and instructive talk. Many of the pitfalls laid for a doctor on cross-examination were pointed out and a number of ways to avoid these traps were given. Some of the medico-legal aspects of the Judd, Hickman, and other cases were also given.

After discussion a rising vote of thanks was given to Doctor Williams. WALDO S. WEHRLY, *Secretary.*

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SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was called to order by President J. F. Doughty at 8:15 p. m., Thursday, May 4, in the Medico-Dental clubrooms, 242 North Sutter Street, Stockton.

Dr. Nathan Hale of Sacramento spoke on the subject *Prostatism*. He handled the topic in a masterly way, covering the historical background and the present-day methods of operation and treatment. He laid particular stress on the Caulk cautery punch operation, stating that the operation is not without danger. It is not simple nor is it complicated. There is no difference in the preliminary preparation of any patient for prostatism. Postoperative dangers are the same lurking, vicious ones one encounters in the open operative methods. Hospital days are shortened. Immediate end-results are often brilliant.

The paper was discussed by Doctors Fitzgerald, Hudson Smythe, and Doughty.

Very interesting and complete reports of the state convention at Del Monte were given by Doctors George Sanderson and Dewey Powell, delegates.

Doctor Powell mentioned especially the prize and honorable mention received by one of our members, Dr. Sam Hanson, for an original paper.

64

Doctor Bolinger of Lodi called attention to some of the publicity being given over the radio by physicians on the subject of the cost of medical care. After some discussion it was moved by Dr. Dewey Powell that the secretary call the attention of the state secretary to the matter, inviting censorship of such talks before broadcasting. This was seconded and passed.

C. A. BROADDUS, *Secretary.*

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SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held in the Bissell Auditorium on Monday, June 12, at 8 p. m., with President M. J. Geyman presiding.

The speaker of the evening was Dr. Verne Hunt of Los Angeles, who gave an extremely interesting and instructive talk on *Surgery of the Colon*. This was followed by discussions and questions by Doctors Wills, Pierce, Wilcox, Ullmann, and Geyman.

The society then went into executive session.

A resolution, signed by the Santa Maria members, requesting the formation of a branch of the Santa Barbara County Medical Society at Santa Maria, was read. Upon discussion it was moved, seconded and carried, that this matter be referred to the board of censors, and if the board of censors reported favorably upon the legality of such branch formation, this reading of the resolution was to be considered as the first reading for an amendment of the by-laws.

A resolution, passed by the Radiologic Section of the California Medical Association, was read and ordered filed. Dr. Arthur E. Serno presented his resignation to the Santa Barbara County Medical Society, which was unanimously accepted. The application of Dr. Horace Coshow was read and, upon balloting, he was unanimously accepted into the society. Doctor Henderson, for the Public Relations Committee, reported progress in the establishment of the downtown dispensary. Doctor Freidell reported for the investigating committee of the Santa Maria Hospital.

It was moved, seconded and carried, that the society take a two months' vacation, the next meeting to be held in September. WILLIAM H. EATON, *Secretary.*

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SANTA CLARA COUNTY

The Santa Clara County Medical Society met on June 21 at the Palo Alto Hospital.

The following officers were elected for the ensuing year: President, George Barry; first vice-president, C. Kelly Canelo; second vice-president, Russell V. Lee; third vice-president, Ronald H. Prien; secretary, E. O. G. Schmitt; assistant secretary, Donald R. Threlfall; treasurer, Harry Hoag; councilors-at-large, James B. Bullitt, L. M. Rose, and Helen Lee.

The Santa Clara County Medical Society has at the present time a membership of 172.

E. O. G. SCHMITT, *Secretary.*

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SONOMA COUNTY

The June meeting of the Sonoma County Medical Society was held at the above written place and date at the hour of 6:40 p. m., President Mark L. Lewis presiding.

The applications for membership in regular form and fully recommended, of Doctors Herbert C. Honor, Vera O. Honor of Cotati, and Henry S. Gossage of Petaluma were received and ordered to take their regular course.

The president welcomed the visiting guests in a few appropriate and well-chosen words. Dr. John W. Shuman of Los Angeles gave a very instructive as well as an interesting dissertation upon the subject *Early Signs of Heart Failure*. Doctor Shuman's keen powers of observation and wide experience in this field permitted him to handle the subject in an able and pleasing manner. His remarks were well received, and an animated discussion followed from which many interesting facts and points in the diagnosis and treatment of heart condition were brought out.

Preceding the business and scientific program a golf game was enjoyed by a goodly number of the members. There being no further business the meeting adjourned, to meet again in September.

W. C. SHIPLEY, Secretary.

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TULARE COUNTY

The final spring meeting of the Tulare County Medical Society was held in Visalia on May 20. A dinner at Motley's Café preceded the program. Those in attendance were: Doctors Barber, Newton Miller, Anne Bond, E. C. Bond, Fowler, Weiss, Kohn, Beck, Hicks, Betts, Fillmore, Rosson, Parkinson, Mitchell, Miller, and Preston. Several members brought guests to the meeting.

At this time it was reported that the total paid membership for 1933 remain at forty-one, there being but three delinquencies.

Doctor Betts briefly sketched the plans of the Public Relations Committee and promised a full report at a later date.

The progress made by the Cancer Commission in the study of cancer was touched on by Doctor Woolsey prior to the paper of the evening.

Embryology of the Neck, with Its Clinical Application was the subject of Dr. J. Homer Woolsey's paper. He discussed cysts, and tumors of the neck from the standpoints of location, recognition, and treatment, together with knowledge recently obtained from the study of human embryos. Illustrative lantern slides emphasized the points brought out and clarified our clinical ideas with regard to this subject. At the conclusion of the presentation the members were given a chart of the subject-matter, which will be of value in differentiating these clinical conditions.

A rising vote of appreciation was tendered Doctor Woolsey for his kindness in coming to the meeting to present this excellent paper.

The meeting was then adjourned for informal discussion.

KARL F. WEISS, Secretary.

CHANGES IN MEMBERSHIP

New Members (27)

Alameda County.—Stanley Samuel Fischer, William Otto Solomon, Arthur Clarkson Smith.

Imperial County.—Merritt C. Canfield, John D. Keye.

Los Angeles County.

Lucius W. Case	Bernard Bruce Newbarr
William M. Christensen	Frederick David Newbarr
Charles Rugus Coate	Pearl Marie Sampson
James Bird Cutter	Samuel Soghor
C. F. Freytag	Marcus Othello Tucker
Calvin Zeno Holt	Wesley John Woolston
Frank Hugh Lane	

Mendocino County.—Arthur C. Huntley.

Riverside County.—Elmer Bingham.

San Diego County.—Walter Lowrie Grow, Roy H. Palmateer.

San Joaquin County.—Frank Alexander McGuire.

San Luis Obispo County.—Raymond Joseph Smyth.

Santa Barbara County.—Albert S. Missall.

Santa Clara County.—Salvadore Vincent Campisi, Arthur T. McGinty.

Transferred (2)

Harrison M. Hawkins, from Kern to Los Angeles County.

Dudley A. Smith, from Alameda to San Francisco County.

In Memoriam

Breitstein, Louis Isidor. Died in Virginia City, Nevada, May 19, 1933, age 54 years. Graduate of the University of California Medical School, San Francisco, 1903. Licensed in California, 1903. Doctor Breitstein was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

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Hulbert, George G. Died in San Diego, June 1, 1933, age 82 years. Graduate of College of Physicians and Surgeons, Keokuk, Iowa, 1880. Licensed in California, 1888. Doctor Hulbert was a member of the San Diego County Medical Society, a retired member of the California Medical Association, and the American Medical Association.

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Roncovieri, Alfred. Died in San Francisco, May 16, 1933, age 46 years. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1911. Licensed in California, 1911. Doctor Roncovieri was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

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Sherwood, Oscar William. Died in Fort Bragg, May 14, 1933, age 71 years. Graduate of the University of Illinois College of Medicine, Chicago, 1885. Licensed in California, 1889. Doctor Sherwood was a member of the Mendocino County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

THE WOMAN'S AUXILIARY TO THE CALIFORNIA MEDICAL ASSOCIATION*

Retiring President's Address to the Auxiliary

By MRS. F. E. COULTER,
Santa Ana

Madam Chairman, Honored Guests, and Delegates:

Anyone who says that reports are dry and musty has never been the president of a pioneer auxiliary to a medical association.

It is a rare privilege to pioneer and to adjust your vision to your assets; to work with younger women who are fired with enthusiasm, and with older women whose judgment is ripe and who keep one from rocking the boat.

Last year when your president took office she stated that she believed that the major work of the State Auxiliary lay in educating and nourishing the county auxiliaries already formed, rather than in bringing into being anemic groups that might struggle for existence.

If every state officer and board member were sincerely interested in the auxiliary movement, there would be no passive organizations. One sincere, unselfish, loyal woman with vision in each auxiliary can almost solve its destiny. We have no right to handicap expansion by accepting the honors of an office and yet make little or no effort to familiarize ourselves with its history, its ideals, and possibilities. Once having become inoculated with the "Handbook"

* As county auxiliaries to the Woman's Auxiliary to the California Medical Association are formed, the names of their officers should be forwarded to Mrs. Thomas J. Clark, chairman of the Publicity and Publications Committee, 40 Ross Circle, Oakland. Brief reports of county auxiliary meetings will be welcomed by Mrs. Clark and must be sent to her before publication takes place in this column. For lists of state and county officers, see advertising page 6. The Council of the California Medical Association has instructed the editor to allocate one page in every issue for Woman's Auxiliary notes.

and the national news letters, we should have in a year's time an enthusiasm that should liken itself to a passion. The national could scarcely have made a greater contribution to the auxiliary movement than that of the publication of its history and growth.

Where we were pioneers one year ago, blazing our own trails into adventurous woods, we are today an army of recruits in training, whose course is well charted. The fact that the work is definitely divided into five distinct sections, namely, social, philanthropic, legislative, educational and public relations, allows for diversified interests.

It is thrilling to have a county report, "We have had a very happy year—no brilliant achievement, but a steady growing bond of friendship and fellowship"; or, "Our county auxiliary has no apologies to make for being a frankly social organization. For the first time physicians' families in the county have met in a group and discovered that as a group they are congenial." This from a county whose stretches of unpaved roads sometimes make it necessary for the members to remain overnight in order to attend an auxiliary meeting.

Another reports an educational program so varied that it makes you long to share each program with them. Can you think of more intriguing subjects than these? "Illness in a Zoo"; "Does Your Child Think?" "Voodism in Haiti"; "Medical Aviation." If you doubt the expanding interests of this group, listen to the following paragraph: "The program committee for this year met with a committee from the county medical society and outlined a series of educational talks on medical subjects." One of our most perfectly organized groups reports that a sewing group met at a hospital and in one day completed twenty-five children's dresses for the Red Cross, and contributed \$10 to a local orphanage.

It is deeply gratifying to note the high trend of all programs. The eagerness with which our members are absorbing a knowledge of what our state is doing for those dependent upon it for scientific care is reflected in their subject-matter. "Crime Prevention and How the Cost of Crime May Be Reduced"; "What We Are Doing for the Mental Defect"; "Delinquency, Its Cause and Cure"—all are engrossing subjects which lend themselves not only to self-education, but prove a liaison between the medical profession and the lay public.

One of the larger counties accomplished a magnificent piece of work in legislative matters through its Committee on Public Relations. Official letters of protest were sent to the members of the Committee on County Government of the California Legislature, to which body had been referred the County Hospital Bill No. 2190, in which we were all vitally interested.

This same county through its Health Education chairman and School Relations chairman distributed some sixteen hundred study envelopes on health matters. Outstanding in value was the work done by this group through the physicians' household budget survey. This work encompassed six counties.

Hygieia is experiencing a slow but steady growth. Many auxiliaries are placing the magazine in high schools and junior colleges, in Young Women's Christian Associations, Young Men's Christian Associations, county hospitals, Mexican schools, detention homes, and county libraries.

Though only one year old, one of the younger auxiliaries reports its membership has increased one-third, and the average attendance is three-fourths of the entire membership. They have taken as a slogan, "Educate ourselves first."

Another president writes: "To familiarize ourselves with those questions that concern both the medical profession and the laity, together with a constructive program for co-operation, have been and are the main aims of our auxiliary."

If you have not caught the vision of the ever receding horizon of auxiliary activities and are prone to be discouraged, listen to this: "Our state organization is only four years old, yet one county unit has

created a philanthropic loan fund; a plan to aid doctors and their families who are in distress."

Still another county has established a medical student loan fund, while another contributes a gift of money to a nurse in each of the two nursing schools. One has had published its county health laws for distribution.

This report would not be complete without recording the personal pride that we feel in our two new organizations, Riverside and Mendocino counties. Much credit is due Mrs. Clare Cushman, who worked indefatigably to organize her county, despite difficult handicaps.

In Mendocino County there was no organized medical society, and it was through the combined efforts of herself and Doctor Cushman that the medical society and auxiliary were effected. For a young organization the work being done in Riverside County can hardly be surpassed.

Does it matter that your president has traveled over two thousand miles or that she has written over one thousand letters and visited seven of the fourteen auxiliaries?

It has been a year rich in opportunities, privileges, and precious friendships. A year made happy by a task done to the best of my ability, whose memory I shall cherish.

President's Message

By MRS. A. M. HENDERSON
Sacramento

Madam Chairman and Delegates:

In approaching the coming year as president of the Woman's Auxiliary to the California Medical Association, I find great satisfaction in the attitude of all board members, county presidents, and committees. Each has signified a desire to do her part, which, after all, is the great measure of value in this work. The success of the president's term of office depends on the helpful attitude of the county auxiliaries, the way their work is completed, and the attention paid by the officers to fulfilling the obligations they assume on taking office. It is with the greatest hope I view the splendid work that may be accomplished, the friendship it holds for us, the broad acquaintance, and the bringing together in closer relations of the members of the medical fraternity and their families.

If we are to be helpful to the medical fraternity we must be representative. To date, the possibilities of our organization have only been touched. We need numerical strength, more county auxiliaries, and larger membership. In order to promote a desire in our neighboring counties to join the auxiliaries, let us develop a social and harmonious attitude. Let us realize that all who are eligible to membership in the auxiliaries have common interests. On September 24 the Council of the California Medical Association directed the secretary to write each county medical association where no auxiliary exists that it might be desirable to ask the secretary or the president to appoint some woman or women to assist in the organization of an auxiliary. That is our lead; have we followed up? If not, let us do so. Let us organize the auxiliary to its limit. We should have a membership equal in numbers to the membership of the California Medical Association.

There is a type of activity to which the auxiliaries in many communities have given attention—that is the service type. I am thinking particularly of such projects as providing loan funds for worthy medical students and raising funds for old-age needs. These seem particularly commendable and should be given study in all auxiliaries. Many members of the auxiliary are also members of other organizations, such as the American Association of University Women, the Parent-Teacher Association, the Social Welfare Workers, etc. More should join similar associations, keeping alert at all times to the interests of the medical profession but at the same time mindful of the necessity of exercising tact in all such contacts. I have recently attended state conventions of several of these

associations and find that matters pertaining to medical practice are discussed with interest in each group. Today the medical profession is greatly concerned with the problem of medical economics. This subject was presented to the state welfare workers in their convention recently held in Sacramento. This is indeed a complicated and difficult problem. We could well afford to give thought and consideration to its solution and owe it to all concerned to make an effort to educate ourselves in the study. Would it not be well for every auxiliary to ask members of the profession to present the different views on the subject at one or more of our regular meetings?

I am attending the national meeting in Milwaukee and shall try to bring the inspiration of that meeting back to members of the California auxiliary.

Component County Auxiliaries

Alameda County.—The regular meeting of the Alameda County Auxiliary was held on May 19 in Oakland at the Women's Athletic Club. Mrs. Charles A. Dukes, president, assisted by Mrs. D. D. Stafford and her committee of hostesses, held a delightful reception before the regular luncheon.

Mrs. William H. Sargent, chairman of the Membership Committee, brought in thirty new members this year, and most of them attended this meeting.

Mesdames Dexter N. Richards, Mrs. Lloyd E. Kendall, and Frank S. Baxter gave most interesting reports of the state medical convention held at Del Monte in May. They were all delightful, witty, informal reports of the auxiliary meetings, from different points of view but all agreeing that the convention was a most interesting, instructive meeting.

We were proud to have two of our Oakland members prize winners in the essay contest on *A Doctor's Dilemma*. Mrs. H. McKay Pier was introduced by the president as the winner of the first prize, and Mrs. Henry A. Beaudoux as the winner of the third prize.

The regular program, following luncheon, was an innovation, since it was given entirely by our own members. It was a delightful hour of music by Mesdames Hayward G. Thomas, pianist; Milton Shutes, violinist; Clarence Page, mezzo-soprano; W. A. S. McGrath and Louis Henry Dyke, accompanists.

We shall have June and July vacation and start our regular programs again in the fall.

* * *

Los Angeles County.—The May meeting was held in the Ebelle Club Solarium, Los Angeles, at twelve o'clock, Mrs. A. Bennett Cooke presiding. A business meeting was held following luncheon. This instructive and interesting program was then enjoyed by the members and guests: *The Responsibility of the Community to the Adolescent Child* by Miss Eloise A. Hafford, former superintendent of the School for Delinquent Girls in New York; *Highlights of the Convention* by Mrs. Philip S. Doane; and *Current Events* by Mrs. W. O. Leach.

* * *

Sacramento County.—The members and guests of this auxiliary motored to Colfax for their May meeting, where they were entertained for luncheon at the home of Dr. and Mrs. Robert Peers. A short business meeting was held, with Mrs. Scatena presiding. Reports of the convention at Del Monte were given by Mrs. Scatena and Mrs. Henderson. The auxiliary was represented at the convention by the following delegates: Mesdames Hugo Childress, Robert Peers, P. Botts, J. Roy Jones, and J. B. Harris. After the business meeting Rev. A. C. Baines of Colfax delivered an address on "California, the Paradise of the World." After adjournment the members and guests joined in congratulating Mrs. Henderson, our newly elected state president.

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NEVADA STATE MEDICAL ASSOCIATION

O. HOVENDEN, McGill	President
D. A. SMITH, Mina	President-Elect
J. N. VAN METER, Las Vegas	First Vice-President
FLEET H. HARRISON, Minden	Second Vice-President
HORACE J. BROWN	Secretary

COMPONENT COUNTY MEDICAL SOCIETIES

CLARK COUNTY

The Clark County Medical Society met on Saturday, May 13.

Doctor Balcom of Las Vegas presented the following program: *Roentgen Diagnosis of Lesions of the Small Intestine* by Dr. Kenneth Davis of Los Angeles; *Non-tubercular Diseases of the Chest* by Dr. Dwight Davis of Los Angeles.

A resolution of condolence was addressed to Dr. H. V. Vander Meulen, whose wife died on April 30, following a long illness.

The society will meet on Sunday, May 21, to greet Dr. Horace J. Brown of Reno.

* * *

The Clark County Medical Society met in regular session at the White Spot Café, Tuesday, June 13.

Dr. R. O. Schofield and Dr. Jantzen of Boulder City were elected to membership.

Dr. C. W. Woodbury of Las Vegas read a paper on *The Goiter Problem*. A vigorous discussion was entered into by Doctors McDaniel, Fenlon, Herzig, and Schofield.

It was decided to hold no meetings in July and August.

J. N. VAN METER, Secretary.

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WASHOE COUNTY

The regular meeting of the society took place at the State Building on May 11.

A membership card under date of May 2, 1933, from the Los Angeles County Medical Association was read stating that Dr. Lawrence Parsons, now of Reno, was in good standing. By unanimous vote of the society Doctor Parsons was accepted into membership of the Washoe County Medical Society.

Mr. R. D. Brisbane, superintendent of the Sutter Hospital, Sacramento, upon invitation addressed the society with reference to insurance in the Superior California Hospital Association. This insurance organization recently organized to care for a group of persons who could receive insurance to cover costs of hospitalization for a stated number of days. The organization is sponsored exclusively by the profession, assisted by dentists and nurses. Mr. Brisbane made a favorable impression. The society will inform itself upon the subject and will be prepared to come to a decision in the future.

Mr. Dewey Holmes, local representative of the Nevada Credit Association, asked permission to talk to the society with reference to getting the physicians to coöperate in securing the financial standing of patients seeking the medical or surgical services. The society took no action upon the plan, believing that it was a matter that the individual physician could concern himself with if he should so desire.

Next followed a most excellent talk by our own member, Dr. Bart Hood. This was in the form of a *Surgical Travelogue*. It was so highly interesting that the bare bones of science were covered with the living flesh of personality. Dr. and Mrs. Hood began a sightseeing and educational tour by first visiting the world's greatest dam, the Boulder Dam at Las Vegas, Nevada. From there the tour extended to Dallas, Fort Worth,

and Wichita Falls. The plan there of no pay, part pay, full pay was on the same plan as is now in vogue in the Washoe County Hospital. Doctor Hood said the plan was satisfactory in Wichita Falls, but upon questioning in Dallas and Fort Worth, it had not been found satisfactory in those cities. From there the tour went to El Paso and Juarez, thence to the great medical and surgical center of the South, New Orleans. Doctor Hood was impressed with the surgical and medical facilities that the city had to offer in the combined Tulane Medical and Louisiana State Medical Colleges, but owing to an epidemic of influenza the surgical departments were closed for the time. The historic part that New Orleans has taken in the history of the United States was commented upon, and with regret the party steered their way to the famous city of the confederacy in the trying days of America's greatest war.

At Richmond Doctor Horsley showed the exquisite courtesy which characterizes the southland. His clinic was extremely profitable. Then Washington, Philadelphia, New York City, Boston, Cleveland, Detroit, Minneapolis, Rochester, Mayo Clinic home and, finally, the Cook County Hospital, with its enormous clinic, were visited with profitable results. It was Doctor Hood's belief that about as much profit came to the physician in observing the work of the different surgeons and then forming his own opinion as to the line of procedure, as might come from a postgraduate course. Certainly such professional travel contacts are bound to give incentives for usefulness to the physician as he applies his art for the benefit of his patients.

At the invitation of Doctor Hood, Doctor Parsons, pathologist, was asked to explain the new theory in vogue at many clinics at present on the "shift to the left." Doctor Parsons elaborated by drawings the branching process in cells and the significance to be heeded whether the patient was forecasting a recovery or decline. Later on Doctor Parsons will give a more detailed paper.

The regular monthly meeting of the society took place on the evening of June 13 in the State Building, Reno.

A representative gathering of the profession was present.

After reading and approval of the minutes of last meeting, the society accepted the transfer application of Dr. W. A. Shaw, formerly of Elko, from the secretary of the Elko County Medical Society. Doctor Shaw being in good standing in both county and state medical societies, his application was received by *viva voce* vote of the society. Doctor Shaw has chosen to specialize in medical and surgical diseases of children, having recently devoted two years' study to this specialty.

A communication from the County Clerk was read requesting the physicians to lower their fee from \$10 to \$5 during the present financial stringency. The society deferred action on same until the September meeting and instructed the secretary to so write the County Clerk. A communication from Mr. Brishane, superintendent of the Sutter Hospital, Sacramento, was read with reference to insurance for hospitalization. This communication was referred to Dr. J. L. Robinson for answer with the suggestion that at present the society was still undecided as to what steps to take on the matter and would consider more time desirable before deciding.

The meeting was then turned over to Doctor Fuller, who had arranged a special program on medical and surgical diseases of the eye to accompany the film on *Cataract Enucleation by the Smith-Indian Method*. This film was produced by Prof. Oscar B. Nugent of the Chicago Eye, Ear, Nose, and Throat College. Doctor Nugent has added several valuable aids to the operation, notably Doctor Barraquez's of Madrid, Spain, suction apparatus for nontraumatic enucleation of cataractous lens. The film showing was preceded by

a prelude on the operation, written by Doctor Nugent. The picture was very clear and seemed to show distinctly every step in the operation. The thanks of the society were extended to Doctor Nugent for his greatly appreciated professional courtesy. Doctor de Chene read an excellent paper on *Care of the Eyes in Adolescent Children*. This paper was followed by Doctor Creveling, who read a paper on *Medical Affections of the Eye*. Doctor Fuller concluded with an excellent paper on the *Commoner Surgical Injuries of the Eye*. All papers were highly instructive to the general practitioner, with the contained lesson not to tamper with another person's eyes unless you know what you are doing and are willing to assume all responsibility.

There will be no meeting during July and August.

THOMAS W. BATH, Secretary.

Season for Mussel Poisoning Approaches.—With the approach of the season when mussel poisonings occur, attention is called again to the simple method by which mussels may be made safer to eat. It has been determined that the addition of one-fourth ounce (one tablespoon) of bicarbonate of soda (common baking soda) to each quart of water in which the shellfish are cooked destroys 85 per cent of the poison, provided that the cooking process is continued for twenty to thirty minutes. If everyone who gathers and eats mussels were to follow this procedure, it is probable that cases of mussel poisoning would be reduced to the vanishing point. To be sure, cooking shellfish with bicarbonate of soda does not grant complete protection, but it is believed that the partial protection afforded is sufficient to prevent severe cases of illness.

The ordinary methods of preparing mussels, by steaming and baking, do not lessen the danger of poisoning. In fact, the water in which these shellfish may be cooked takes up most of the poison, and if the broth is not discarded the danger of poisoning is increased greatly. Cooking does not lessen the danger of poisoning. Furthermore, the belief that the blackening of a silver coin can be used as an indicator for the presence of the poison is a mistaken belief. Individuals who may suffer from mussel poisoning should never be treated with alcohol for the reason that the poison is most readily soluble in that product.

There were forty-two cases of mussel poisoning in California last year, and it is probable that a seasonal quarantine on these shellfish will be established again this year. The period to be covered by such quarantine would depend entirely upon the laboratory tests for toxicity.—*Weekly Bulletin, California Department of Public Health*.

Plague Under Control.—More than thirty years have passed since the first case of plague occurred in California. During those years two epidemics of bubonic plague have occurred in San Francisco and two pneumonic epidemics—one in Oakland and one in Los Angeles. Other cases have been sporadic cases of bubonic plague which has occurred from time to time in sections where rodent plague is known to exist. Fortunately for the other states, this disease has never spread from California to districts beyond the boundaries of this state, and there is no available evidence to show that the infection has been transmitted to susceptible rodents in other states. It is only through the combined efforts of city, state, and federal authorities that this highly disastrous disease has been kept within bounds. It is doubtful that any other infectious disease may be regarded with greater concern than plague—this truly pestilential disease which at one time caused grass to grow in the streets of London, which is the greatest menace to human life in many oriental countries at the present time, a disease which may be regarded as a constant threat to life and happiness in California.—*Weekly Bulletin, California Department of Public Health*.

MISCELLANY

Under this department are ordinarily grouped: News; Medical Economics; Correspondence; Twenty-five Years Ago column; Department of Public Health; California Board of Medical Examiners; and other columns as occasion may warrant. Items for the News column must be furnished by the fifteenth of the preceding month. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Coming Meetings.

California Medical Association, Riverside, California, April 30 to May 2, 1934. Emma W. Pope, M. D., Secretary, 2004 Four Fifty Sutter, San Francisco.

Nevada State Medical Association, Las Vegas, Nevada, September 29 to 30, 1933. Horace J. Brown, M. D., Secretary, Medico-Dental Building, Reno.

Western Branch of the American Urological Association, Vancouver, B. C., August 3 to 5. George W. Hartman, M. D., Secretary, 999 Sutter Street, San Francisco.

Medical Broadcasts.*

American Medical Association Health Talks.—The American Medical Association broadcasts on Monday and Wednesday from 9:45 to 9:50 a. m. (central standard time) over station WBBM (770 kilocycles, or 389.4 meters).

There is also a fifteen-minute talk, sponsored by the association, on Saturday morning from 9:45 to 10 over station WBBM.

San Francisco County Medical Society.—The San Francisco County Medical Society broadcasts every Tuesday from station KFRC, 4 to 4:15 p. m., and over station KJBS from 11:15 to 11:30 a. m.

Los Angeles County Medical Association.—The radio broadcast program for the Los Angeles County Medical Association for the month of July is as follows:

Tuesday, July 4—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, Heart Diseases in Children.

Tuesday, July 11—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, The Price of Worry.

Tuesday, July 18—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, Insomnia.

Tuesday, July 25—KFI, 10 to 10:15 a. m. and KECA, 9:30 to 9:45 a. m. Subject, When Baby Learns to Walk.

University of California Radio Talks on Diet.—A new series of radio broadcasts on diet and health is to be given by members of the staff of the University of California Medical School, over stations KPO (San Francisco), KECA (Los Angeles), and KFSD (San Diego).

In this series of ten broadcasts, said H. Sparks, emphasis will be placed on diet in its relation to the health of persons young and old, well and sick.

Subjects to be discussed in this series will include: our vitamin needs; our mineral needs; how is diet to meet the child's prenatal growth needs?; the young infant; the runabout child; the school child; the youth; diet for the adult; diet for the sick; and preparing and serving the adequate diet.

Staff members of the University of California Medical School who will participate in these broadcasts are: Mrs. Nina Simmonds Estill, Doctors Alice Maxwell, Francis Scott Smythe, C. F. Gelston, Adelaide Brown, Amos U. Christie, S. R. Nettier, H. C. Shepardson, Miss Alice Lamb. The series was arranged by Dr. Langley Porter, dean of the Medical School.

* County societies giving medical broadcasts are requested to send information as soon as arranged (giving station, day, date and hour, and subject) to CALIFORNIA AND WESTERN MEDICINE, 450 Sutter Street, San Francisco, for inclusion in this column.

American Congress of Radiology.—Chicago during the World's Fair will welcome the largest radiological congress ever held in the United States when the four national radiological societies will meet in joint convention. Other members of the medical profession are invited as well. The American Congress of Radiology is scheduled for September 25 to 30, inclusive, at the Palmer House. According to Dr. Henry K. Pancoast of Philadelphia, president of the congress, all physicians, physicists, biologists, and others connected with the allied sciences will be made welcome at the congress.

The four radiological societies sponsoring the congress who have eliminated their regular annual meetings for 1933 in its favor are: The American College of Radiology, the American Radium Society, the American Roentgen-Ray Society, and the Radiological Society of North America. The Chicago Roentgen Society will also participate. Members of the medical profession who wish further information should write to 2561 North Clark Street, Chicago, concerning membership in the congress, railroad and hotel rates, etc.

Proposed Radio Medical Broadcasting Law.—The following item should be of interest: "By no means the least important bit of legislation likely to emerge as a full-fledged law from the present session of the California State Legislature is a measure providing that radio broadcasting of untrue statements regarding the cure of ailments and the use of drugs would be a misdemeanor, punishable by certain penalties. The measure already has the approval of the lower house and now awaits the formal endorsement of the upper house. The proposed law is necessary to control the situation that has resulted from a badly overworked field of radio broadcasting, which has been consistently cultivated with characteristic disregard of the public interest, regardless of complaint and criticism. Every radio owner is familiar with the situation, and finds it most impossible in fact to escape the ballyhoo relative to various quack cures involving claims that insult the intelligence of the normal individual. Not that advertising of this type convinces many people, rather the effect is almost entirely lost, since the first impulse of the listener, usually obeyed, is to turn off the ballyhoo as soon as the dial can be reached. Nevertheless radio broadcasting stations continue to accept and exploit this form of advertising in order to further swell the private income at the expense of an institution which rightly should be regarded as a public utility. Newspapers of the country find considerable pride in the fact that newspaper advertising is conducted on a high plane of truth and accuracy and the part they have played in weeding out undesirable advertising. Inaccuracy in advertising is discouraged as promptly and relentlessly as in the news columns. During recent years certain regulations, both federal and state, have been created to regulate all claims relative to medicinal and narcotic products, but it is the newspaper profession itself which has led the move for such regulation in order to make their own efforts more effective. It is sincerely believed that the proposed legislation now before the legislature will have the complete endorsement of every citizen genuinely interested in eliminating the objectionable features of radio broadcasting and advertising" (Editorial, *Eureka Standard*, May 8, 1933). The *Assembly Weekly History* of Friday, May 12, 1933, reports that on May 12 the Senate refused passage, and notice of reconsideration was given by Senator Jespersen.

American Public Health Association.—The preliminary program for the scientific sessions of the sixty-second annual meeting of the American Public Health Association follows the traditional pattern of breakfast, morning, luncheon, dinner, afternoon and evening meetings, beginning Monday morning, October 9, and continuing through Thursday, October 12.

The successful Health Education Institute, held last year for the first time, will be repeated this year, the theme of the five sessions being "The Psychology of Health Education."

Pacific Roentgen Club Organized.—Standing firmly upon the principle that radiology is the practice of medicine, the Pacific Roentgen Club was organized at a meeting of roentgenologists of California, held at the Santa Maria Inn on June 11. The meeting was attended by delegates from all sections of the state. Problems affecting radiology in its relationship with other branches of medicine and with the general field of public health were discussed at length, with the unanimous opinion that an organization should be formed to aggressively deal with those problems. Lowell S. Goin, M. D., of Los Angeles, was elected as chairman; L. H. Garland, M. D., of San Francisco, is secretary, and these two, with Henry Snure, M. D., of Los Angeles, John Lawson, M. D., of Sacramento, and Robert Stone, M. D., of the University of California, form the Executive Committee.

"There have been constant inroads upon radiology by laymen, nurses, corporations, and others not scientifically trained in this highly important branch of medical practice," said a statement issued from the meeting. "We, as radiologists, object to this for several reasons. First, from the standpoint of public health. The roentgen ray is a potentially dangerous instrument, as is the scalpel of the surgeon, the hypodermic of morphia, and the anesthetic. It is because these are in skillful and careful hands that they are of benefit to humanity—a thing equally true of the roentgen rays. The danger is not only one of physical damage to tissue (negligible in skilled hands), but the less spectacular and more commonly encountered danger resident in the absurd diagnoses by incompetent persons.

"We maintain that radiology, being as it is the diagnosis and treatment of human disease, is the practice of medicine, and as such should be solely in the hands of those licensed to practice the healing art.

"We object to the exploitation of any physician for the gain of any nonmedical concern. Under ruling of the California courts a corporation cannot engage in the practice of medicine. Nevertheless corporations do practice radiology, which we maintain to be a part of the practice of medicine.

"X-ray diagnosis is one of the greatest advances that have been achieved in the practice of medicine. Radiation therapy, combined with good surgery, offers the only chance we know of today for the cure of malignant disease. If radiology is degraded by falling into the hands of lay persons and is forced down to the state where the radiologist is merely the servant of a corporation, the high standards we have set up will fall, and not only medicine, but the general public will suffer a distinct loss.

"It is to prevent these things, and to stand firmly upon our rights as practitioners of medicine, that we have organized. We propose to take such steps as may be necessary to prevent further inroads upon radiology. We intend to maintain and improve our present standards and to have at all times the recognition due us as a learned and dignified branch of medicine. The California Medical Association has recognized this officially in Resolution No. 5 of the House of Delegates, adopted at the recent annual meeting, and printed on page 465 of the June issue of CALIFORNIA AND WESTERN MEDICINE."

The organization is being rapidly perfected and a program is now being mapped out to carry through the principles upon which it is founded.

New Clinic Law.—Regulations for the supervision of more than one thousand clinics and dispensaries are being prepared by the State Board of Public Health, which is charged with enforcement of the Clinic Law, recently signed by Governor James Rolph.

With certain exceptions, it was pointed out by Dr. Giles S. Porter, Director of the State Department of Public Health, all clinics and dispensaries in the state are required by this new law to be licensed each year. The exceptions are for those operated by the federal government; those operated by employers, without profit, for the sole benefit of their own employees; and research clinics working under nonprofit foundations registered with the United States Government for tax exemption.

Written application for permits must be filed with the State Board of Public Health within ninety days from the time the law becomes effective.

The law defines a clinic and dispensary to be "a place, establishment or institution . . . furnishing at such place . . . without charge or for part pay or full pay, advice, diagnosis, treatment, medicines, drugs, appliances or apparatus to any person or persons not residing or confined in any such place . . . and afflicted with bodily and/or mental diseases or injuries . . ."

Five classes of clinics and dispensaries are listed in the law: charitable, teaching and research, employer's, private pay, and governmental. Further information may be had by applying to the California State Board of Health, State Building, at Sacramento, San Francisco, or Los Angeles.

New Laboratory Policy Adopted.—At its regular meeting, held April 22, 1933, the State Board of Public Health adopted the following outline of general policies relating to the service provided by the state bacteriological laboratory:

1. No specimens will be received at all from cities or counties having an approved public health laboratory.
2. Blood specimens to be examined as a check on treatment will not be received excepting for indigent cases, and from communities not excluded by paragraph 1.
3. Blood specimens will be received for purposes of diagnosis only from communities not excluded under paragraph 1.
4. The name and post-office address of every Wassermann patient must accompany the sample, and the question as to indigency must be answered.
5. The chief of the laboratory is authorized to mail a notification to each patient advising him that no charge is made by the state for the examination.
6. Blood specimens will be accepted from all state institutions and county hospitals without reservation other than that county hospitals receiving pay patients may send specimens only from patients who do not pay, so certifying on the form accompanying the specimens.
7. The Chief of the Bureau of Laboratories is authorized to refuse service to physicians who do not comply with the above requirements.

Summer Extension Classes in Bay Region.—The University of California Extension Division, which last year provided evening and day classes in a wide variety of subjects for more than 30,000 persons, has just announced that more than 250 new classes of instruction will be started in the Bay region during the months of August and September.

"There is no requirement for admission to a class other than the ability to pursue the work with profit," states Prof. Leon J. Richardson, Director of Extension.

A new schedule of classes will be available for distribution in August and may be obtained by communicating with one of the offices: in San Francisco, 540 Powell Street; Oakland, 1730 Franklin Street; Berkeley, 301 California Hall.

Among the new classes starting at 540 Powell Street, San Francisco, which might be of interest are the following:

French—Conversational.

Mr. J. Pajus. Tuesday, 3 p. m. Begins September 12.

French—Conversational.

Mr. J. Pajus. Friday, 8 p. m. Begins September 15.

French—Elementary.

Dr. J. de la Horpe. Monday and Wednesday, 7 p. m. Begins August 28.

French—Intermediate.

Dr. J. de la Horpe. Monday and Wednesday, 5 p. m. Begins August 28.

Russian—Elementary, I.

Mr. C. Malamuth. Monday, 7 p. m. Begins September 11.

Russian—Elementary, II.

Mr. C. Malamuth. Monday, 6 p. m. Begins September 11.

German—Elementary.

Dr. H. J. Weber. Tuesday, 7 p. m. Begins August 22.

German—Intermediate.

Dr. H. J. Weber. Monday, 7 p. m. Begins August 21.

Italian—Elementary.

Mr. U. P. Maggetti. Monday and Thursday, 7 p. m. Begins August 28.

Spanish—Elementary.

Mr. A. M. Berrien. Tuesday and Thursday, 7 p. m. Begins August 29.

Portuguese—Conversational, I.

Dr. J. R. S. Leite. Friday, 7 p. m. Begins September 15.

Portuguese—Conversational, II.

Dr. J. R. S. Leite. Friday, 8 p. m. Begins September 15.

Chinese—An Outline of Chinese Art and Culture.

Dr. H. H. Hart. Wednesday, 10:30 a. m. Begins September 13.

Chinese—An Outline of Chinese Art and Culture.

Dr. H. H. Hart. Wednesday, 8 p. m. Begins September 13.

Chinese—An Outline of the History of China.

Dr. H. H. Hart. Tuesday, 8 p. m. Begins September 12.

Philosophy—The Art of Thinking.

Dr. H. O. Blote. Tuesday, 10:30 a. m. Begins September 12.

Philosophy—The Art of Thinking.

Dr. H. O. Blote. Tuesday, 7 p. m. Begins September 12.

Philosophy—What Is Philosophy?

Dr. C. A. Hogan. Wednesday, 8 p. m. Begins September 20.

History of California.

Dr. C. J. DuFour. Wednesday, 7 p. m. Begins August 30.

History of Western Europe.

Associate Professor F. C. Palm. Thursday, 7 p. m. Begins August 24.

History of Hispanic America.

Professor C. E. Chapman. Thursday, 7 p. m. Begins August 31.

Music—A Review of Harmony.

Mr. A. I. Elkus. Tuesday, 7 p. m. Begins September 12.

Music—Fundamentals of Music Appreciation.

Mr. A. I. Elkus. Tuesday, 8 p. m. Begins September 12.

International Association for Prevention of Blindness.—Seven American ophthalmologists represented the United States at the recent annual meeting of the International Association for Prevention of Blindness at Madrid, Spain.

The principal topic of general discussion was "A Plan of International Classification of the Causes of Blindness." The American delegates presented the results of research during the past several years by the Committee on Statistics of the Blind, sponsored by the American Foundation for the Blind and the American National Society for the Prevention of Blindness.

The growth of the International Association since its establishment by the representatives of twenty-eight countries who met at The Hague on September 14, 1929, was reviewed by Prof. F. de Lapersonne of the University of Paris, president of the association. Despite the difficulties of a world-wide economic depression, said Professor de Lapersonne, the association has enlisted the support of public health and social welfare organizations in many countries.

Two of the principal directions in which the association is working, according to Professor de Lapersonne, are toward the prevention of industrial eye accidents and the establishment of "sight-conservation classes" for school children with seriously defective vision. In connection with the latter problem, he cited the fact that the association has taken up this question with the Child Welfare Committee of the League of Nations.

Infected Rodents Carry Plague.—No human cases of plague have occurred in California since 1929, but a considerable number of infected rodents have been discovered during the past two years. The State Department of Public Health has worked continuously during the past biennial period in its efforts to control the disease among rodents, both rats and ground squirrels, in order that the state may be protected adequately against a recurrence of this highly fatal disease. The department has maintained a crew of men in the rural districts, whose duty it is and has been to gather and examine ground squirrels for the presence of plague. Whenever infected rodents have been discovered, a campaign of destruction of all rodents within a large area surrounding the point of discovery of the infected rodent has been carried on. The various counties have cooperated with the State Department of Public Health in the destruction of ground squirrels, and many of the municipalities of the state where activities in the control of the rat population are carried on have contributed valuable assistance. The large amount of work that has been carried on along these lines is indicated in the biennial report of the Bureau of Sanitary Inspections.

This disease has been sleeping and waking in California for more than thirty years, and it is only through exerting continuous efforts against infected rodents that California is protected against this much to be feared disease. Plague will continue to be a menace to the health of Californians until such time as all possibility of rodent infection is removed.—*Weekly Bulletin, California Department of Public Health.*

California Industrial Accident Commission.—Workmen's compensation was made a law in California so that quick and speedy justice might be obtained by injured employees. Ever since its inception in 1911, there have been unwarranted criticisms about the delay in decisions. This arises mainly because the injured employee does not realize the true situation, which is that very often liability for the injury is assumed immediately by the employer or the insurance company and compensation is paid over a period of time. Before the expiration of jurisdiction of the commission a controversy arises between the parties which is submitted to the commission for decision. The records will show that in matters where the commission is called upon to give an original decision the period between the hearing and the decision averages two months, and the same is true as to supplemental matters. However, the injured employee very often considers that his case has been pending from the time of injury until the time of decision.

Injured employees will receive during the coming year approximately \$5,250,000 in cash under the decisions of the Industrial Accident Commission. An equal amount will be awarded as medical expense.

Provide Protection Against Plagues.—The presence of National Guard reserve officers' training camps at Monterey and near San Luis Obispo, as well as in Santa Cruz County, has emphasized the importance of rodent control measures in the vicinity of such camps where large numbers of men are drawn from all parts of the state. It has been the policy of the Department of Public Health to maintain ten-mile squirrel-free zones around the centers of population. The establishment of such zones provides a wide measure of safety for the larger cities. It is only by carrying on activities of this sort intensively that any degree of assurance against the invasion of this highly fatal disease is granted. It is far cheaper to provide insurance of this sort than it is to carry on control work exclusively when cases of human plague occur. In the Los Angeles outbreak it was necessary for the city, county, and state to spend half a million dollars within a period of seven months in its work to place the outbreak under control. In addition to this amount, property owners of Los Angeles spent two million dollars in complying with rat-proofing ordinances.—*Weekly Bulletin, California Department of Public Health.*

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. VI, No. 7, July 1908

From some editorial notes:

County Officers.—Some time this fall (the exact date has not been set, but it will probably be in September) there is to be held a meeting of the presidents and secretaries of county medical societies with the officers of the State Society. The date and place will be announced later. This meeting is for the purpose of bringing together those who are closely in touch with organization work all over the state, to the end that we may come to a better understanding of conditions in the various counties, and study how to increase and improve the body upon which all medical organization is founded—the County Medical Society. . . .

A Valuable Department.—One of the very valuable departments of *The Journal of the American Medical Association* is that of Therapeutics. Often we feel keen regret that lack of space prevents us from reprinting the articles in this department in their entirety—anything else would be unsatisfactory. The conditions governing therapeutic requirements are so clearly and concisely—so sanely—put that they must be of value to every reader. . . .

The New Register.—For some weeks the work of compiling the new edition of the Register and Directory has occupied the attention of our office. It is hoped that the volume may be ready for distribution about the latter part of July or the middle of August, though the actual date is as yet uncertain. During the past year a spirit of maddening unrest seems to have pervaded the whole medical profession of the state and the number of changes of address is something wonderful and fearful. . . .

Article on Plague.—In this issue we begin the publication of a most valuable contribution to the literature of bubonic plague. Dr. W. C. Rucker, U. S. P. H. and M. H. S., has kindly translated for the JOURNAL, at no little personal sacrifice of time and trouble, an article by Le Dantec, which translation makes far and away the most comprehensive contribution to the subject that has yet appeared in English. There are no less than three distinct foci of plague on the Pacific Coast: San Francisco, the Bay counties, and Seattle. How long they will remain plague foci, no one can even guess; but that they will so remain for a period of time longer than it is pleasant to contemplate, no one at all conversant with the disease and its history will for a moment doubt. . . .

New State Journal.—Tennessee has joined the family of state organizations which publish a journal, and under date of June appears the first number of *The Journal of the Tennessee State Medical Association*. It is in every way a clean, dignified, well-published periodical, and is under the able editorial management of Dr. George H. Price, Nashville. . . .

From an article on "Acute Otitis Media in Infancy and Childhood" by H. Bert. Ellis, M. D., Los Angeles.

Diseases of children have been and still are neglected to a great extent; more neglected than any other branch of the practice of medicine. This is largely due

* This column strives to mirror the work and aims of colleagues who bore the brunt of society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

(Continued on Advertising Page 18)

BOARD OF MEDICAL EXAMINERS
OF THE STATE OF CALIFORNIA†

By CHARLES B. PINKHAM, M. D.
Secretary-Treasurer

News Items

"Regulations for the supervision of more than one thousand clinics and dispensaries today were being prepared by the State Board of Public Health, which is charged with enforcement of the Clinic Law, signed by Governor Rolph. With certain exceptions, it was pointed out by Dr. Giles S. Porter, Director of the State Department of Public Health, all clinics and dispensaries in the state are required by this new law to be licensed each year. The exceptions are for those operated by the Federal Government, those operated by employers without profit, for the sole benefit of their own employees, and research clinics working under nonprofit foundations registered with the United States Government for tax exemption." (San Francisco *Call-Bulletin*, June 8, 1933.)

"After deliberating only fifteen minutes, a jury in Municipal Judge Lazarus' court found Dr. N. S. Housman not guilty last night on charges of failure to record disposition of narcotics. . . . A previous trial resulted in disagreement." (San Francisco *Examiner*, May 25, 1933.)

"The conviction of Mrs. Margaret Browning, operator of a so-called 'abortion farm' near Chowchilla, Madera County, today was affirmed by the Third District Court of Appeal. Mrs. Browning, convicted of performing an illegal operation, . . . appealed her case principally on the ground that a part of the trial was held during the banking holiday proclaimed by Governor Rolph and therefore was irregular procedure. The Appellate Court ruled that while a court trial held on a holiday over the objection of the defendant would be void and irregular, it also held the defendant in this particular case waived his rights by not making a timely objection. Her attorneys argued the case on the first day of the holiday. Mrs. Browning also contends the judge and prosecuting attorney were prejudiced in the proceedings. In this regard the Appellate Court remarks: 'We have read carefully the entire record and observe no evidence of unfair treatment to the defendant.' The higher court likewise states there is nothing to support the appeal contending the judge delivered 'misleading, confusing, and erroneous' instructions to the jury, nor showed prejudice by not delivering certain instructions for the defendant." (Sacramento *Bee*, May 20, 1933.) (Previous entry, May, 1933.)

"State narcotic officers yesterday arrested Dr. Arthur L. Davis, West Los Angeles physician, on suspicion of sale and possession of morphine. Mrs. Jean Davis, wife of the doctor, was also held on suspicion of possessing morphine. . . ." (Los Angeles *Examiner*, May 13, 1933.)

"Convicted on four counts of violating the Harrison Narcotic Act, Dr. Roy F. Ruth, physician with offices in the Taft Building, and Johnny Golinda, former prize fighter, today awaited imposition of sentence Monday. The two were found guilty in the United States court yesterday. Doctor Ruth continued his liberty on a \$2,500 bond. The fighter was returned to jail." (Hollywood *Citizen*, May 26, 1933.)

† The office addresses of the California State Board of Medical Examiners are printed in the roster on advertising page 6.

(Continued on Advertising Page 19)